DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMA Docket No. 3995

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This document has been recorded as

Exploration

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

CC: USGS, USBM

Routing Slip

To:	700	Date	9/29/55
To:	Oper Com	Date	10-11-55
To:	Mr. Mittendorf	Date	1-27-56
To:	Mr. Mittendorf	Date	2-29-56
To:	Oper. Com	Date	3/8/56
To:		Date	
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CONTROLLED DOCUMENT

700

FILE COPY
Surname: Murphy
Ellis

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

MAR 9 1956

Messrs. Jack C. Pollard
and Robert H. May
Post Office Box 6557
Houston 5, Texas

Re: Docket No. DMEA-3995 (Uranium)
Horseshoe, Verde, and Fault claims
Maricopa and Yavapai Counties, Arizona

Gentlemen:

This is to acknowledge Mr. Pollard's letter, dated March 5, 1956, advising Mr. Ellis that you are no longer interested in processing the above-docketed application.

In accordance with this advice, we will consider the application withdrawn and close the subject docket.

We wish to thank you for your interest in the Defense Minerals Program and for bringing your property to our attention.

Sincerely yours,

O. O. Mittendorf

Administrator

FMMurphy/izm 3-8-56
cc to: Docket
Code 700 Mr. Murphy
Admr.'s Reading File
Operating Committee
DMEA Field Team, Region III (2)
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

R.L.R.

3/8/56 dgm

ROBERT H. RAY & JACK C. POLLARD
2500 BOLSOVER ROAD
P. O. BOX 6557
HOUSTON 5, TEXAS

RECEIVED
MAR - 8 1956

March 5, 1956

Re: Docket No. DMEA 3995 (Uranium)
Horseshoe, Verde, and Fault Claims
Maricopa & Yavapai Counties, Ariz.

U. S. Department of Interior
Defense Minerals Exploration Administration
Washington 25, D. C.

Attention: Mr. Ernest Wm. Ellis, Chief
Rare and Miscellaneous Metals Division

Gentlemen:

In reply to your letter of March 1, 1956 in connection with the application relating to the captioned docket, please be advised that we are no longer interested in the processing of this application.

Thank you for the attention you have given this matter.

Yours very truly,

J. C. Pollard

JCP:mh

Surname copy

700

Murphy
Ellis
Mitchenson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

MAR - 1 1956

Messrs. Jack C. Pollard
and Robert H. Ray
Post Office Box 6557
Houston 5, Texas

Re: Docket No. DMEA-3995 (Uranium)
Horseshoe, Verde, and Fault Claims
Maricopa and Yavapai Counties, Arizona

Gentlemen:

Reference is made to our letter dated January 30, 1956, relating to the captioned docket.

Action on your application is pending receipt of the information requested in the above-mentioned letter. If you are no longer interested in the processing of this application, please advise us.

Sincerely yours,

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

FTMurphy/gla
2-29-56
cc to: Admr.'s Reading File
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700, Mr. Murphy
DMEA Field Team, Region III (2)

R.C.S.

2-1-56 dgm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
FEB - 1 1956

January 30, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3995, (Uranium), Jack Pollard and Robert H. Ray, Horseshoe, Verde, and Fault Uranium Claims, Maricopa and Yavapai Counties, Arizona

Enclosed are the original and three copies of a memorandum by T. M. Romslo on the subject property. This information might have some influence in your final decision on the merits of the application.

The Report of Examination was transmitted to your office January 11, 1956.

W. M. Traver

W. M. Traver

Enclosures

DMEA
Date Rec'd.
JAN 30 1956
BUREAU OF MINES
Denver, Colorado

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Box 4097
Tucson 5, Arizona

January 27, 1956

RECEIVED
FEB - 1 1956

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team, Region III

From : Superintendent, Southwest Experiment Station

Subject : Docket DMEA-3995, Jack Pollard and Robert H. Ray, Horseshoe, Verde and Fault Uranium Claims, Maricopa and Yavapai Counties, Ariz.

Enclosed are original and 8 copies of a short memorandum by T. M. Romslo on the above property. While in the field yesterday, Romslo heard from a reliable source that the 125-foot adit as proposed in the DMEA examiners' field report already had been driven 100 feet by the operators, but that the uranium values decreased as the adit was advanced. As the uranium values were very low, the operators decided not to drive the crosscut, but instead had a diamond drill station cut near the end of the adit and planned to drill a core hole down the fissure from that station.

This memorandum is being sent to you as this late work on the subject property might have some influence in a final decision on the merits of the application. Our engineer has not visited the property so cannot vouch for this information, although he received it from a very reliable source.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
J. N. Faick
DMEA-3995
DF

WRStorms:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

RECEIVED
FEB - 1 1956

Box 4097
Tucson 5, Arizona

January 27, 1956

Memorandum

To : Walter R. Storms, Superintendent, Southwest Experiment Station, Region III

From : T. M. Romslo, Mining Engineer, Tucson, Ariz.

Subject : DMEA-3995, Jack Pollard and Robert H. Ray (Uranium) Horseshoe, Verde, and Fault Claims, Maricopa and Yavapai Counties, Ariz.

Yesterday while in the field, I talked to a person who is well acquainted with the current exploratory work at subject property. Information obtained should be reliable and is reported for its possible value in processing the application.

The proposed adit of the DMEA report of examination reportedly was recently completed to a total length of about 100 feet. Results of the work were probably unfavorable as values in the adit decreased from about 0.1 percent U_3O_8 near the portal to about 0.02 percent U_3O_8 near the face. Upon completion of the adit a diamond drill station was excavated in the adit. Drilling of down holes from this site is expected to start shortly.

T M Romslo

T. M. Romslo
Mining Engineer
Tucson, Arizona

CC W. M. Traver (Orig. & 8)
J. N. Faick
DMEA-3995
DF

TMRomslo:frj

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
FEB - 1 1956

January 30, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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W. M. TRAVER,

W. M. Traver

Enclosures

DMEA
Date Rec'd.
JAN 30 1956
BUREAU OF MINES
Denver, Colorado

Box 4097
Tucson 5, Arizona

January 27, 1956

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team, Region III

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Walter R. Storms

Walter R. Storms

CC W. M. Traver (8)
J. N. Faick
DMEA-3995
DF

WRStorms:frj

Box 4097
Tucson 5, Arizona

January 27, 1956

Memorandum

To : Walter R. Storms, Superintendent, Southwest Experiment Station, Region III

From : T. M. Romale, Mining Engineer, Tucson, Ariz.

Subject : DMEA-3995, Jack Pollard and Robert H. Ray (Uranium) Horseshoe, Verde, and Fault Claims, Maricopa and Yavapai Counties, Ariz.

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T M Romale

T. M. Romale
Mining Engineer
Tucson, Arizona

CC W. M. Traver (Orig. & 8)
J. N. Faick
DMEA-3995
DF

TMRomale:frj

700

FILE COPY
Surname: Murphy

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

JAN 30 1956

Messrs. Jack C. Pollard
and Robert H. Ray
Post Office Box 6557
Houston 5, Texas

Re: Docket No. DMEA-3995 (Uranium)
Horseshoe, Verde, and Fault Claims
Maricopa and Yavapi Counties, Arizona

Gentlemen:

In order to continue processing your above-docketed application, we will require the following additional data:

(1) A breakdown of the estimated costs of $37.50 per foot for drifts; $32.50 per foot for crosscuts; and $600 for moving equipment;

(2) Referring to Supplement No. 2 to the application adding 1,000 feet of diamond drilling @ $7.00 per foot, kindly submit copies of bids from 3 Independent Contractors for this drilling;

(3) A copy of the agreement or agreements to purchase the claims, mentioned in the application, from Kenneth P. Smith, Elmer Young, and Earl C. Johnson;

(4) Six executed copies of an Owners' Consent to Lien signed by the above-named men and, also, if married, by their wives.

Enclosed are 6 Owners' Consent to Lien forms. The "Annex I" shown on the sample form should be a duplicate of the list of claims in your application. The title "Mining Claims Mentioned on Page I of Application" should be deleted and substitute the words "Annex I" instead.

We shall promptly continue processing your application on receipt of the above-requested data.

Sincerely yours,

Ernest Wm. Ellis, Chief
Rare and Miscellaneous
Metals Division

Enclosures

Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

FMMurphy/izm 1-20-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Region III (2)

700

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

JAN 30 1956

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Metals Division

Enclosures

Messrs. JECrawford, Rm. 3641
THKilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA

FMMurphy/izm 1-20-56
cc to: Docket
Code 700
Mr. Murphy
Admr.'s Reading File
DMEA Field Team, Region [illegible]

1/30/56 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JAN 30 1956

January 27, 1956

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Report of Examination, Docket DMEA 3995, Jack R. Pollard and Robert H. Ray, Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

I have reviewed the report of examination of Horseshoe, Verde, and Fault claims, DMEA Docket 3995, dated January 11 and received in this office January 24. I have also discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

While the average grade of uranium mineralization present in the adit on the Horseshoe No. 1 claim is estimated to be only about 0.10 percent U_3O_8, it is still theoretically economic grade uranium-bearing material. It is true that costs of recovery might be so excessive as to prohibit actual mining of the material, but it is doubtful if such a consideration should be a factor in the basic review of a request for assistance on an exploration project. The fact that the applicant has conducted a successful prospecting program and uncovered interesting amounts of primary uranium mineralization is, I believe, essential. The field examiners have suggested for Government participation a program consisting of (1) drifting 125 feet along the fault, (2) crosscutting 100 feet, (3) cutting a diamond drill station at end of crosscut, and (4) drilling 6 holes at the station. It has been indicated by the field examiners that operations under (1) and (2) would probably be completed prior to the execution of DMEA contract, thus allowing for a possible reduction in the total estimated cost of $23,239.50.

I concur with the recommendations of the field examiners that the proposed project be approved, bearing in mind that two of the most significant uranium ore bodies in North America, the Algom mine and the Pronto mine of the Blind River District, Canada, consist of vast reserves of low-grade uranium, averaging no more than 0.15 percent.

RECEIVED
JAN 30 1956

Mr. Hosted also concurs with the field examiners' recommendations.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E Crawford
John E. Crawford

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

RECEIVED
JAN 30 1956

January 27, 1956

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON, D.C.

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DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

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Mr. Hosted also concurs with the field examiners' recommendations.

The report is being forwarded to the Chief, Division of Minerals, in accordance with the routing slip attached thereto.

John E. Crawford

1-27-56

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
JAN 27 1956

January 26, 1956

Re: DMEA 3995
R. H. Ray and J. C. Pollard
Horseshoe, Verde & Fault claims
Maricopa & Yavapai Cos., Ariz.
$33,856.00 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: N. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicants requested assistance in exploring by drifting, crosscutting and diamond drilling a southwesterly-trending fault zone, a part of which is mineralized by a black radioactive mineral, probably uraninite. The fault cuts granite and, as shown in the face of 10-foot adit, blocky granite fills part of the zone. Greenish material, believed to be altered dike, rock fills in around the granite. The uraninite occurs with calcite, hematite and chlorite in the altered greenish rock.

Signs of the fault, though not traced by work in the outcrop, probably shows in aerial photographs for a thousand feet southwest from the short adit. The scarp of a north-south fault also shows in the photographs. A relationship, if any, to the dike fault has not been established.

Diamond drilling, by X ray drill, has been done on the line of the dike-fault and on numerous outcrops showing anomalous radioactivity, but information relating to the work seems not to have been kept. Ten holes drilled on the line of the fault, probably around the adit, failed to core and were not probed so represent wasted work, but 2 holes, 30 and 117 feet long, drilled from the face of the adit are reported to show values. Thus sludge and core from the 117-foot hole reportedly contained 0.14 percent U_3O_8, and core and sludge from 10 feet to the bottom of the 30-foot hole reportedly contained 0.13 percent U_3O_8.

Samples taken at the adit face, from the ore pile and the drill holes assayed:

Location	Width	Taken by	Percent eU_3O_8	Percent cU_3O_8
Dump rock		DMEA	0.09	0.09
Adit - face at 10 ft.	1.5	"	0.07	
" " " 4 "	1.5	AEC	0.66	0.50
" back at 2 ft.	3.5	"	0.14	
" face at 0 ft.	4.0	Applicant		0.48
117 ft. d.d. hole along vein	117	"		* 0.14
30 ft. d.d. hole along vein	10-30	"		* 0.13

* Samples reportedly were composite of sludge and core.

The examiners suspect near surface enrichment accounts for the higher grade samples, but no secondary uranium minerals are mentioned. The face samples are below 'ore' grade but in the absence of signs of secondary enrichment it may, for the time being, be permissible to average the samples of the examiners and the A.E.C. and thereby obtain an 'ore grade' value. At any rate, the adit is probably being driven and new data are being obtained. If, as Mr. Romslo concludes, most of the adit work, the crosscut and the drill station proposed by the applicant are completed by the time the present application is processed, a second look should be taken and, should the results of the adit drift work sustain the predictions of the 117-foot drill hole, the drilling and perhaps more work in the fault could be made the subject of a contract.

I think the prospect seen by the examiners deserves work. The exploratory work under way will tell whether and when assistance should be given.

N. E. Nelson

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IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
JAN 27 1956

January 26, 1956

Re: DMEA 3995
E. H. Ray and J. C. Pollard
Horseshoe, Verde & Fault claims
Maricopa & Yavapai Cos., Ariz.
$33,856.00 - Uranium

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From: H. H. Malcom, U. S. Geological Survey

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R. E. Nelson

R. E. Nelson

RENelson:iml
G-1/26/56

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
JAN 27 1956

January 26, 1956

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Maricopa & Yavapai Cos., Ariz.
$33,856.00 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: E. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicants requested assistance in exploring by drifting, crosscutting and diamond drilling a southwesterly-trending fault zone, a part of which is mineralized by a black radioactive mineral, probably uraninite. The fault cuts granite and, as shown in the face of 10-foot adit, blocky granite fills part of the zone. Greenish material, believed to be altered dike, rock fills in around the granite. The uraninite occurs with calcite, hematite and chlorite in the altered greenish rock.

Signs of the fault, though not traced by work in the outcrop, probably shows in aerial photographs for a thousand feet southeast from the short adit. The scarp of a north-south fault also shows in the photographs. A relationship, if any, to the dike fault has not been established.

Diamond drilling, by X ray drill, has been done on the line of the dike-fault and on numerous outcrops showing anomalous radioactivity, but information relating to the work seems not to have been kept. Ten holes drilled on the line of the fault, probably around the adit, failed to core and were not probed so represent wasted work, but 2 holes, 30 and 117 feet long, drilled from the face of the adit are reported to show values. Thus sludge and core from the 117-foot hole reportedly contained 0.14 percent U_3O_8, and core and sludge from 10 feet to the bottom of the 30-foot hole reportedly contained 0.13 percent U_3O_8.

Samples taken at the adit face, from the ore pile and the drill holes assayed:

Location	Width	Taken by	Percent U3O8	Percent U3O8
Dump rock		DMEA	0.09	0.09
Adit - face at 10 ft.	1.5	"	0.07	
" " " 4 "	1.5	AEC	0.66	0.30
" back at 2 ft.	3.5	"	0.14	
" face at 8 ft.	4.0	Applicant		0.48
117 ft. d.d. hole along vein	117	"		* 0.14
30 ft. d.d. hole along vein	10-30	"		* 0.13

* Samples reportedly were composite of sludge and core.

The examiners suggest near surface enrichment accounts for the higher grade samples, but no secondary uranium minerals are mentioned. The face samples are below 'ore' grade but in the absence of signs of secondary enrichment it may, for the time being, be permissible to average the samples of the examiners and the A.E.C. and thereby obtain an 'ore grade' value. At any rate, the adit is probably being driven and new data are being obtained. If, as Mr. Remale concludes, most of the adit work, the crosscut and the drill station proposed by the applicant are completed by the time the present application is processed, a second look should be taken and, should the results of the adit drift work sustain the predictions of the 117-foot drill hole, the drilling and perhaps more work in the fault could be made the subject of a contract.

I think the prospect seen by the examiners deserves work. The exploratory work under way will tell whether and when assistance should be given.

H. E. Nelson

H. E. Nelson

HENelson:iml
G-1/26/56

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Hosted, 3210

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
JAN 27 1956

January 26, 1956

Re: DMEA 3995
R. E. Ray and J. C. Pollard
Horsehoe, Verde & Fault claims
Maricopa & Yavapai Cos., Ariz.
$33,856.00 - Uranium

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: E. E. Nelson, U. S. Geological Survey

Subject: Review of Field Team report.

The applicants requested assistance in exploring by drifting, crosscutting and diamond drilling a southwesterly-trending fault zone, a part of which is mineralized by a black radioactive mineral, probably uraninite. The fault cuts granite and, as shown in the face of 10-foot adit, blocky granite fills part of the zone. Greenish material, believed to be altered dike, rock fills in around the granite. The uraninite occurs with calcite, hematite and chlorite in the altered greenish rock.

Signs of the fault, though not traced by work in the outcrop, probably shown in aerial photographs for a thousand feet southeast from the short adit. The canyon of a north-south fault also shows in the photographs. A relationship, if any, to the dike fault has not been established.

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Samples taken at the adit face, from the ore pile and the drill holes assayed:

Location	Width	Taken by	Percent eU_3O_8	Percent eU_3O_8
Dump rock		DMEA	0.09	0.09
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" back at 2 ft.	3.5	"	0.14	
" face at 0 ft.	4.0	Applicant		0.48
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* Samples reportedly were composite of sludge and core.

The examiners suspect near surface enrichment accounts for the higher grade samples, but no secondary uranium minerals are mentioned. The four samples are below 'ore' grade but in the absence of signs of secondary enrichment it may, for the time being, be permissible to average the samples of the examiners and the A.E.C. and thereby obtain an 'ore grade' value. At any rate, the adit is probably being driven and new data are being obtained. If, as Mr. Rosale concludes, most of the adit work, the crosscut and the drill station proposed by the applicant are completed by the time the present application is processed, a second look should be taken and, should the results of the adit drift work sustain the predictions of the 117-foot drill hole, the drilling and perhaps more work in the fault could be made the subject of a contract.

I think the prospect seen by the examiners deserves work. The exploratory work under way will tell whether and when assistance should be given.

H. E. Nelson

H. E. Nelson

HENelson:iml
G-1/26/56

cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Rested, 3210

1-23-56 dgm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
JAN 19 1956

January 11, 1956

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 3995 (Uranium), Jack R. Pollard and Robert H. Ray, Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Enclosed are the original and three copies of the Report of Examination on the subject property.

The field examiners recommend a three-stage exploration program at an estimated cost of $23,239.50.

The DMEA Field Team, Region III is on record against Government aid on bedded deposits containing appreciably less than o.1% U_3O_8 so can not consistently recommend aid on a vein deposit which will require exploitation by underground mining methods of potential reserves which are somewhat less than significant. We are not fully convinced that exploration of the subject property is warranted.

DMEA Field Team, Region III

W. M. Traver

W. M. Traver

E. N. Harshman

E. N. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE
1-23-56
(date)

DMEA
Date Rec'd.
JAN 6 1956

IN REPLY REFER TO:

RECEIVED
JAN 10 1956

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BUREAU OF MINES
Denver, Colorado

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

January 5, 1956

TRANSMITTED
JAN 11 1956

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA 3995 (Uranium), Jack R. Pollard and Robert H. Ray (Horseshoe, Verde, and Fault claims), Maricopa and Yavapai Counties, Arizona.

Enclosed are the original and nine copies of a geologic report by Leonid Bryner, U. S. Geological Survey, covering his examination of the subject property.

For reasons as follow: I am not fully convinced that exploration of the subject property is warranted:

1. Uraninite occurs "only as stains which permeate calcite" in a greenish rock which may represent a dike in a fault zone. Drilling has indicated that this rock may terminate about 114 feet beyond the face of the present short adit on the Horseshoe No. 1 claim.

2. Although high uranium assays (0.14 percent to 0.66 percent U_3O_8) were reported from samples taken by the A. E. C. near the portal of the adit, Bryner concludes that these assays represent material from a zone of surface enrichment. On the basis of samples taken by the examiners in the face of the adit and the results of drilling by the applicant Bryner estimates the uranium-bearing material contains an average of 0.10 percent U_3O_8 over a width of 1-1/2 feet.

about $7.50/ton including production bonus

Reviewed by
DMEA OPERATING COMMITTEE
1-23-56
(date)

3. The geologic data presented in the report indicate that exploration may lead to the discovery of additional mineralized material similar in width and grade to that already found.

4. Considering the fact that this is a vein deposit, and will require exploitation by underground mining methods it appears that the potential reserves are somewhat less than significant, and that these reserves are not "commercial to near commercial" as stated in the Conclusions and Recommendations of the Bryner report.

E. N. Harshman
Member, Field Team

Enclosures (10)

ENHarshman:mp

DMEA
Date Rec'd.

JAN 6 1956

BUREAU OF MINES
Denver, Colorado

Box 4126 University Station
Tucson, Arizona

MINERAL DEPOSITS
D.M.E.A.
RECEIVED

RECEIVED JAN 3

JAN 18 1956

U.S.
GEOLOGICAL SURVEY
DENVER, COLORADO

December 27, 1955

MEMORANDUM

TRANSMITTED

JAN 11 1956

TO: Mr. E. N. Harshman

FROM: J. N. Faick

SUBJECT: DMEA 3995 (Uranium), Horseshoe, Verde and Fault Group, Maricopa and Yavapai County, Arizona; R. H. Ray and J. C. Pollard, applicants.

Enclosed are the original and 10 copies of a report of examination of the above subject property by Leonid Bryner. This report recommends approval of Government participation in exploration because of the possibility that primary uranium ore in minable widths and grade may persist along a prominent fault on the Horseshoe No. 1 claim.

This report and the recommendation of Government participation in exploration have my approval.

J. N. Faick

J. N. Faick

JNF:ms

cc: Harshman (10)
Storms

Reviewed by
DMEA OPERATING COMMITTEE

1-23-56
(date)

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

RECEIVED
JAN 19 1956
DMEA
Date Rec'd.
JAN 6 1956
BUREAU OF MINES
Denver, Colorado

FIELD TEAM, REGION III

GEOLOGY

EXAMINATION REPORT

DMEA 3995

TRANSMITTED
JAN 11 1956

HORSESHOE, VERDE, AND FAULT GROUP, MARICOPA AND YAVAPAI COUNTY, ARIZONA

R. H. RAY AND J. C. POLLARD, APPLICANTS

(Uranium)

By
Leonid Bryner
Geologist
U. S. Geological Survey

Reviewed by
DMEA OPERATING COMMITTEE
1-23-56
(date)

December 23, 1955

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

RECEIVED
JAN 19 1956

EXAMINATION REPORT

DMEA 3995
HORSESHOE, VERDE, AND FAULT GROUP,
MARICOPA AND YAVAPAI COUNTY, ARIZONA
(Uranium)

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RESERVES	6
EXPLORATION	6
CONCLUSIONS AND RECOMMENDATIONS	7

ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Proposed Exploration	" " "
Fig. 4	Geologic Map	Following page 8

INTRODUCTION

On September 21, 1955 R. H. Ray and J. C. Pollard applied for Defense Minerals Exploration Administration aid in a $33,856 program to explore for uranium on the Horseshoe, Verde, and Fault claims.

The claims are located about 2 airline miles west of Horseshoe Dam on the Verde River, Arizona. They cross the line between Maricopa and Yavapai Counties. Although the claims are 45 in number, only those on Lime Creek are the sites of proposed exploration, and of these, only the Horseshoe No. 1 claim contains ground which appears to merit exploration. The turnoff to the property is 0.6 miles downstream from Horseshoe Dam, and a rough road leads 2½ miles west from this turnoff to the Horseshoe No. 1 claim.

The claims are unpatented. They are the property of K. P. Smith, E. W. Young, and E. C. Johnson. Ray and Pollard are the lessees.

The examination was made on November 29 by T. M. Romslo of the U. S. Bureau of Mines, and by the writer. J. G. Malherbe, geologist and representative for the applicant, conducted us over the ground.

The property is not described in the literature as it is a new discovery. It has been examined, however, by M. L. Reyner, chief, Phoenix Sub-office of the Salt Lake Exploration Branch of AEC. Both J. N. Faick, of the U. S. Geological Survey, and I discussed the property with Reyner.

In a letter to Faick, dated November 30, 1955, and referring to the showing on the Horseshoe No. 1, Reyner says:

> "Since the structure is fairly strong, with considerable alteration, and uranium ore is present, the prospect definitely warrants further exploration work."

GEOLOGY

Lime Creek in this area flows east into the Verde River. The claims lie along Lime Creek, about where the creek leaves the mountains and flows into the Verde valley. In the claim area the rock is almost entirely Precambrian (?) granite. It contains a few altered mafic dikes, and at the east edge of the claim area is overlapped by Tertiary (?) gravels. The gravels north of Lime Creek, near their contact with the granite, are tilted almost vertically in places. This tilting is near a northerly trending fault that is easily recognized by a scarp in the granite (fig. 4). The course taken by this fault, as seen in aerial photographs, indicates that it dips steeply east. Though it apparently has disturbed the gravels north of Lime Creek, the fault is not evident on the photographs south of Lime Creek. Presumably some of the gravels exposed south of the creek are younger than the fault, and cover it. The southerly projection of this fault is near or possibly within the most easterly claims of the group, though I did not recognize the fault on the ground in the claim area. Other structures within the granite are also recognizable in aerial photographs. The most interesting of these, from the standpoint of uranium mineralization, is a southwesterly-trending lineament that crosses Lime Creek near the center line of the Horseshoe No. 1 claim and is traceable on the photograph for about a thousand feet south of the creek. This lineament probably corresponds to the fault zone that contains the main uranium showing of the property.

The main mineralized zone has been opened by a ten-foot adit into the south bank of Lime Creek at about the level of the bed of the creek (fig. 4). The adit is being driven in the above-mentioned fault zone where it trends S50°W and dips 75 to 80 degrees southeast. The fault zone is about 3½ feet wide and is occupied in part by an irregular mass of highly altered, slickensided greenish rock that may represent an altered dike.

Uranium seems to be confined to the greenish rock though no radioactive minerals were recognized in the field. The most radioactive parts of the rock display coatings of a black, amorphous mineral. A specimen containing this ore mineral was submitted to LaMar G. Evans, mineralogist with the U. S. Bureau of Mines. Evans' report is quoted below:

> "Microscopic examination of thin sections and polished surfaces reveals that this sample is composed essentially of chlorite, quartz, calcite, sericite and small amounts of hematite, pyrite, ilmenite, oligoclase and a uranium mineral tentatively identified as uraninite. The chlorite, quartz, sericite and calcite are intergrown with each other and in most areas are extremely fine-grained. Under the microscope these minerals appear to have been partially altered and then resolidified by additional calcite and quartz.
>
> "The uraninite occurs with calcite, hematite and some chlorite in small black veinlets crosscutting the specimen at random. Studies of selected polished surfaces showing these veinlets reveal that the uraninite occurs only as stains which permeate the calcite."

Diamond drilling has shown that the radioactive greenish rock extends underground along the strike for at least 114 feet. At this distance from the face the drill cut granite. This may have been due either to the drill drifting off its target or to termination of the rock. The persistence of the fault zone, however, suggests that there is a good possibility of finding the favorable host rock for at least several hundred feet along the strike.

The extension of the radioactive zone at depth is unknown. The applicant has drilled several holes into the floor of the adit but no core or sludge was recovered from these holes. The extension of the radioactive zone above the adit likewise is unknown; though there probably is as much as 100 feet of backs above the adit.

The long diamond drill hole into the face of the adit (fig. 4) yields a small flow of water. This, combined with the fact that the adit is only a few feet above stream level, suggests that it is slightly below the water table. Evaporation of the groundwater near the outcrop may have raised the uranium content near the outcrop. This might account for the higher assays obtained by the applicant and by AEC when the adit had been advanced less than four feet into the bank of Lime Creek. If a zone of enrichment such as this is the explanation of these higher values, then it appears that the present 10-foot depth of the adit is sufficient to have penetrated this zone, as the sampling of the present face gives lower results on the order of the lower results obtained from the long diamond-drill hole.

Several showings, somewhat similar to the one described, occur upstream and downstream from the adit (fig. 4). None of these, however, occupies such a distinct and persistent fault zone, and none of them shows much more than trace uranium mineralization.

GRADE

No ore has been shipped from this property, though several tons of low-grade, extracted from the adit, are stored near the portal. U. S. Bureau of Mines Sample No. 12780, taken from this pile of low-grade

ore during the examination, assayed 0.09 percent U_3O_8, both chemically and radiometrically. Another U. S. Bureau of Mines sample, No. 12781, was taken across the greenish rock in the face of the 10-foot adit (fig. 4). This sample, representing a width of $1\frac{1}{2}$ feet, assayed radiometrically 0.07 percent U_3O_8. No chemical assay was made.

A composite of sludge from the 117-foot horizontal diamond drill hole drilled southwest from the face of the adit assayed chemically 0.14 percent U_3O_8; the interval from 5 to 70 feet contained 0.12 percent. The sludge from another hole at the adit face drilled to a depth of 30 feet in approximately the same direction but at an inclination of -5 degrees, assayed chemically 0.13 percent U_3O_8 for the interval from 10 to 30 feet.

Reyner in his letter reports that when the adit was 4 feet long one AEC sample, across 1.5 feet of the face, assayed 0.66 percent eU_3O_8 and 0.50 percent cU_3O_8, and another across 3.5 feet of the back, two feet in from the portal, assayed 0.14 percent eU_3O_8. The applicant reports that a 48-inch channel sample across the mineralized zone assayed 0.16 percent cU_3O_8. This sample probably was taken before the adit had been driven. For the reasons pointed out on page 4, the higher assays probably represent the grade of the mineralized zone only near the surface.

RESERVES

The single horizontal diamond-drill hole on the Horseshoe No. 1 claim provides a basis for a small reserve estimate. There can be considerable question as to the distribution of actual values in this hole. For that reason the reserve based on this hole is classified as inferred rather than indicated or measured. Using a distance along the hole of 100 feet, a width of ore of $1\frac{1}{2}$ feet, and a vertical extent of 10 feet, gives about 100 tons of inferred reserves. This rock probably averages about 0.1 percent U_3O_8.

The possibility of finding more reserves by exploration along the strike seems to be good, as the structure appears to be strong and persistent in that direction. The behavior of ore at depth is still too problematical to allow a prediction of reserve possibilities down-dip from the adit. But exploration in this direction probably would yield the most information about the potentialities of this deposit. Nothing is known of the uranium content of the rock above the adit. It is possible, however, that leaching of the ground above the adit has made this rock submarginal in grade.

EXPLORATION

The applicant's amended exploration proposal on the Horseshoe No. 1 claim, further modified after discussion with Romslo and the writer, consists of drifting 125 feet along the fault, then crosscutting to the southeast 110 feet, and cutting a diamond drill station at the end of the crosscut. From this station the applicant

proposes to drill 6 holes; 3 to cut the fault at 100-foot intervals at a depth of 100 feet, and 3 to cut it at 100-foot intervals at a depth of 300 feet. The work proposed from the adit should be in three stages as follows: (1) driving the adit, (2) crosscutting from the adit and drilling the three shallower holes, (3) drilling the three deeper holes.

It is likely that stages (1) and (2) would be completed before a DMEA contract could be arranged. But in case either of these stages is not completed at that time, the showings revealed by the current stage should decide whether the next exploration stage is justified.

The applicant's plan also includes drilling near other showings on the property. These other showings, however, are considerably less promising-looking than the adit on the Horseshoe No. 1 claim. Details of this additional proposed work are not included here as government participation in this part of the applicant's program is not recommended.

CONCLUSIONS AND RECOMMENDATIONS

The fault zone on the Horseshoe No. 1 claim merits exploration approximately as suggested by the applicant because:

(1) The best available information indicates that the deposit contains commercial to near-commercial values of uranium in widths of about one and one-half feet.

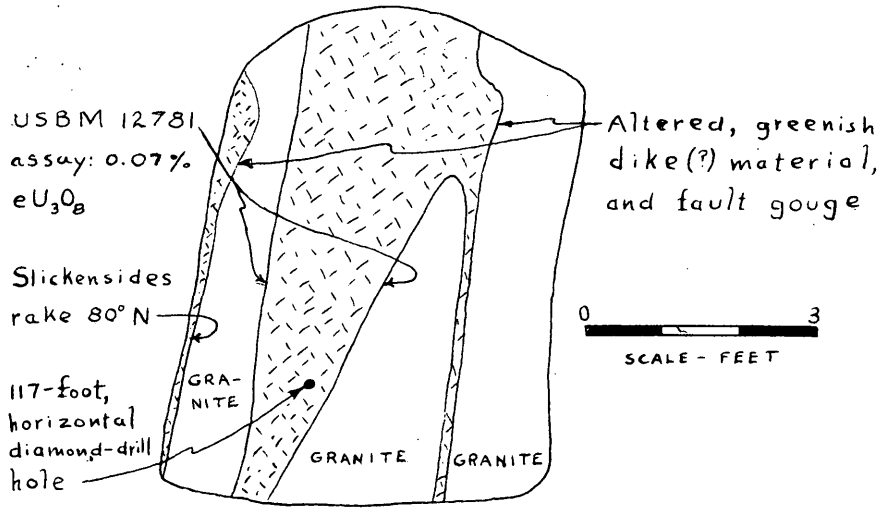
(2) The deposit is in a distinct and persistent fault zone and therefore might contain correspondingly persistent uranium mineralization;

(3) The probability of uraninite being the ore mineral suggests that the deposit is not simply a near-surface concentration of uranium.

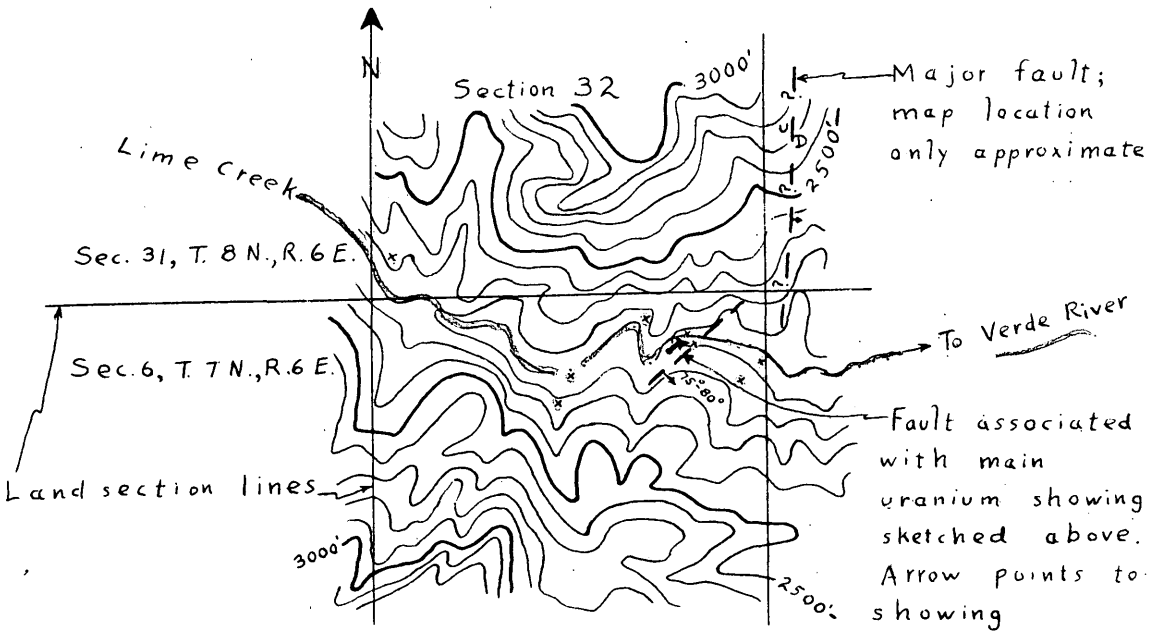
(4) The exploration plan is a reasonable one, and the operator seems technically as well as financially able to complete it;

(5) The exploration program is a relatively inexpensive one, especially as a large part of the work is likely to be completed before a DMEA contract can be arranged.

It is recommended, therefore, that the applicant be granted a DMEA contract.



SKETCH, LOOKING SW AT FACE OF 10-FOOT ADIT, HORSESHOE NO. 1 CLAIM, MARICOPA CO.
(Location is shown below by heavy arrow)



Approximate location of anomalous radioactivity shown by crosses colored red.

Map is enlarged from USGS Cave Creek Quadrangle

FIG 4. - GEOLOGIC MAP OF HORSESHOE, VERDE, AND FAULT CLAIM AREA, MARICOPA CO., ARIZ.

DMEA-3995

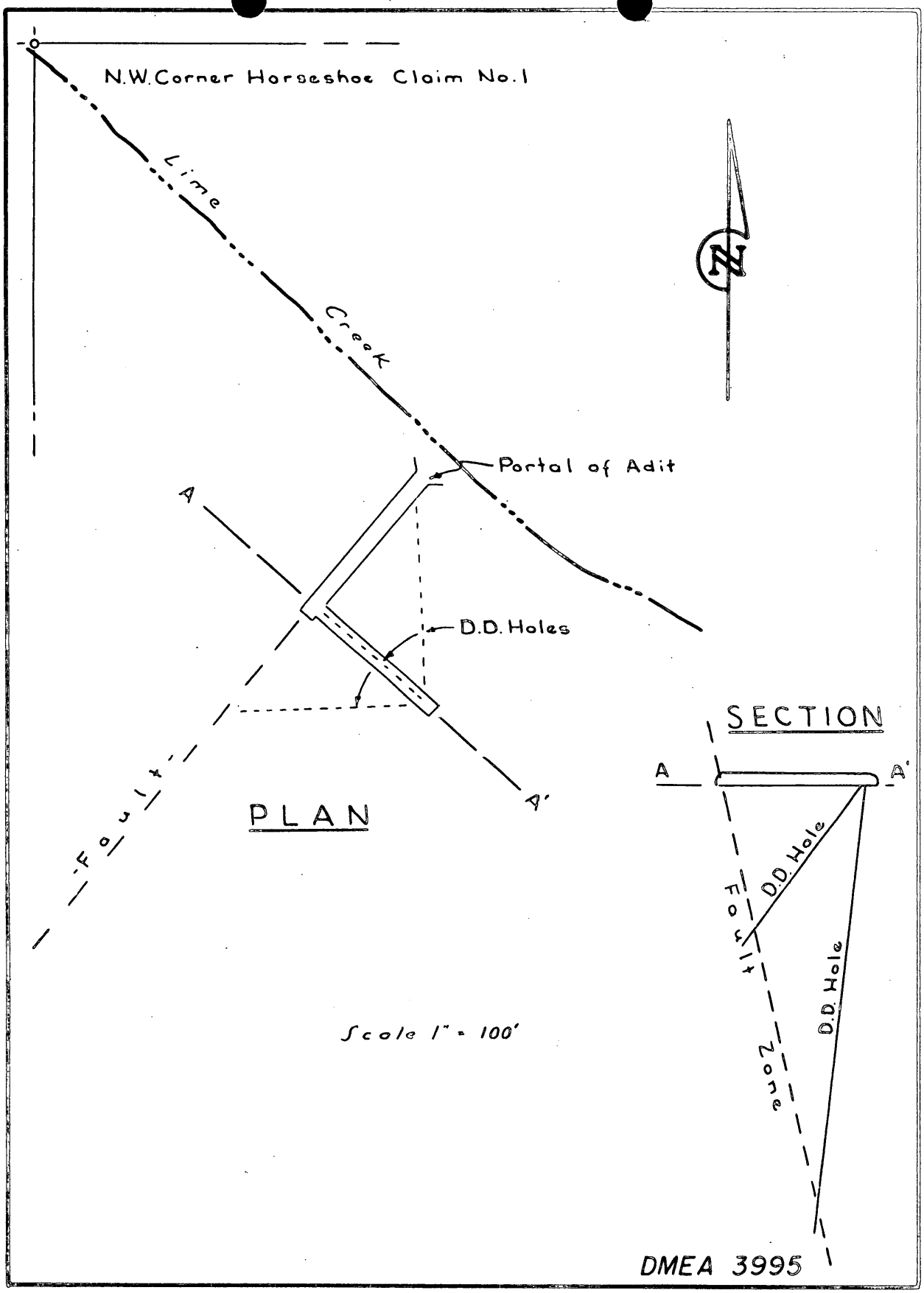


FIG. - 3 - PROPOSED EXPLORATIONS, POLLARD AND RAY

MARICOPA & YAVAPAI COUNTIES, ARIZONA

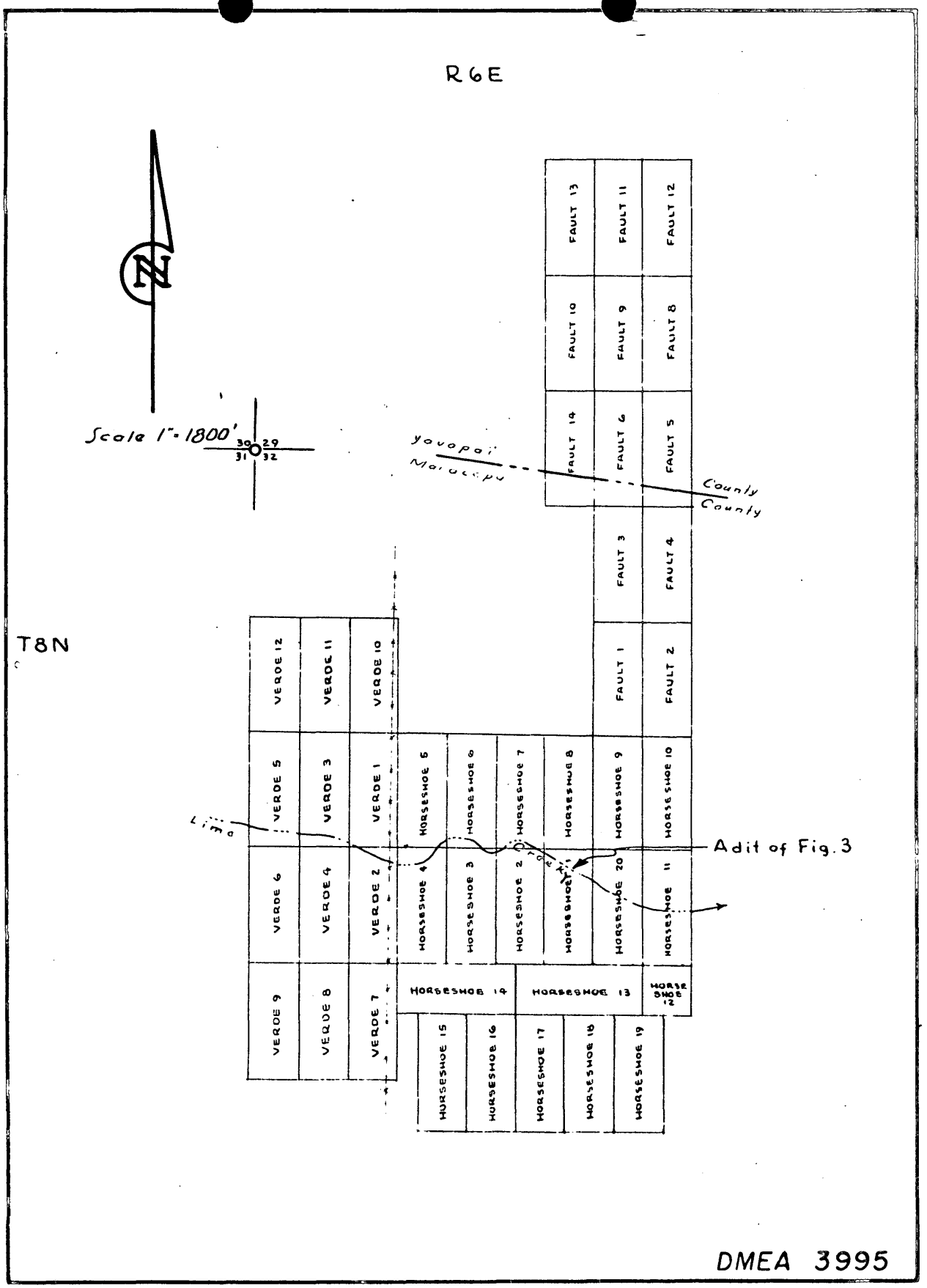


FIG.-2-CLAIM MAP, JACK R POLLARD & ROBERT H RAY

MARICOPA & YAVAPAI COUNTIES, ARIZONA

DMEA
Date Rec'd.
DEC 29 1955
BUREAU OF MINES
Denver, Colorado

JAN 19 1956

Box 4097
Tucson 5, Arizona

December 27, 1955

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team, Region III

TRANSMITTED
JAN 11 1956

From : Superintendent, Southwest Experiment Station

Subject : Field Examination Report, Docket DMEA-3995, Jack R. Pollard & Robert H. Ray, Horseshoe, Verde and Fault Uranium Claims, Maricopa and Yavapai Counties, Ariz.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by T. M. Remale of the Bureau of Mines and L. Reid Bryner of the Geological Survey, and the section on Engineering by Remale for the above report. A separate section on Geology will be submitted by the Survey.

As there seems to be a good chance to discover a significant amount of uranium ore by the proposed exploratory work, the DMEA examiners recommend that Government aid be provided the applicants. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (10)
J. N. Faick
DMEA-3995
Mr

WRStorms:frj

Reviewed by
DMEA OPERATING COMMITTEE
1-23-56
(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

RECEIVED
JAN 19 1956

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED
JAN 11 1956

DMEA-3995, Jack R. Pollard's and Robert H. Ray's Horseshoe, Verde, and Fault Uranium Claims Maricopa and Yavapai Counties, Arizona

T. M. Romslo, Mining Engineer
U. S. Bureau of Mines

Leonid Bryner, Geologist
U. S. Beological Survey

December 1955

Reviewed by
DMEA OPERATING COMMITTEE
1-23-56
(date)

RECEIVED
JAN 19 1956

TRANSMITTED
JAN 11 1956

SUMMARY, CONCLUSIONS, AND RECOMMENDATION

By T. M. Romslo[1] and Leonid Bryner[2]

The Horseshoe, Verde, and Fault claims in Maricopa and Yavapai Counties, Ariz. were examined for uranium by the Defense Minerals Exploration Administration in connection with an application for Government aid by Jack R. Pollard and Robert H. Ray. The application was docketed as DMEA-3995. It requested aid in exploring the property by driving an adit and crosscut and by both surface and underground diamond drilling. Total cost of the work was estimated at $40,856.12.

Uranium was discovered on the claims early in 1955. Since then, an access road has been built, numerous short diamond drill holes put down, and an adit started. At present, exploratory work is largely confined to driving the adit. Approximately 10 tons of material containing about 0.1 percent U_3O_8 has been produced and stockpiled on the property.

Known uranium mineralization of possible economic importance is confined to a strong and persistent fault zone in granite. In the adit, 10 feet long at the time of this examination, the fault zone trends S. 50° W. and dips 75 to 80 degrees southeast. It is about 3.5 feet wide. Uranium mineralization appears to be

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1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

confined to 1.5 feet of highly altered greenish rock within the fault zone. Uraninite has been tentatively identified in the ore, but no secondary uranium minerals have been recognized.

A diamond drill hole from the face of the adit follows the greenish rock along the fault for about 114 feet. The sludge from this hole averaged 0.14 percent U_3O_8. On the basis of this hole a reserve of about 100 tons of 0.1 percent U_3O_8 are inferred for the deposit. The possibility of increasing the reserves by exploration seems promising enough to warrant a small project.

The project recommended by the examiners is planned in three stages and estimated to cost $23,239.50. The applicants have already begun exploration work, so a major part of this work will most likely be completed at their own expense before a DMEA contract can be drawn up.

RECEIVED
JAN 19 1956

DMEA-3995, JACK R. POLLARD'S AND ROBERT H. RAY'S
HORSESHOE, VERDE AND FAULT URANIUM CLAIMS
MARICOPA AND YAVAPAI COUNTIES, ARIZONA

TRANSMITTED
JAN 11 1956

Engineering Report

By T. M. Romslo
Mining Engineer
U. S. Bureau of Mines

December 1955

DMEA-3995, JACK R. POLLARD'S AND ROBERT H. RAY'S
HORSESHOE, VERDE AND FAULT URANIUM CLAIMS
MARICOPA AND YAVAPAI COUNTIES, ARIZONA

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INTRODUCTION

Jack R. Pollard and Robert H. Ray submitted an application to the Defense Minerals Exploration Administration for aid in exploring for uranium on the Horseshoe, Verde, and Fault claims in Maricopa and Yavapai Counties, Ariz. The application was docketed as DMEA-3995, reviewed by the Operating Committee, then sent to the Field Team of Region III for examination of the property.

The application, as originally received on September 23, 1955, requested aid in a proposed diamond drilling project costing an estimated $21,683.62. A proposed amendment of October 27, 1955 proposed supplemental explorations involving drifting and cross-cutting at an estimated cost of $12,172.50. A second requested amendment of Dec. 2, 1955 proposed that the total estimated cost of the project be increased to $40,856.12 by the addition of $7,000.00 for supplemental diamond drilling.

Field investigations were carried out on Nov. 29, 1955 by Leonid Bryner, geologist, U. S. Geological Survey and T. M. Romslo, mining engineer, U. S. Bureau of Mines. The examining team was accompanied by the applicant's representative, J. G. Malherbe.

The property had been examined by a geologist for the Atomic Energy Commission. Findings of the investigation were furnished to the DMEA examining team.

LOCATION AND ACCESSIBILITY

The Horseshoe, Verde and Fault mining claims are about 47 air miles northeasterly from Phoenix, Ariz. in sec. 5, T. 7 N., R. 6 E. and secs. 29 and 32, T. 8 N., R. 6 E., Maricopa and Yavapai Counties, Ariz. (figure 1). They may be reached from Phoenix, the nearest railroad shipping point, by traveling about 40 miles northeasterly on the paved portion of the Horseshoe Dam road to the village of Cave Creek. Proceed 25 miles on the graded portion of the road to the Dam, then follow a westerly trending bulldozer road for 2.8 miles to the adit on Horseshoe Claim No. 1.

The Government's nearest uranium purchasing depot is at Cutter, Ariz., a railroad siding 97 miles east of Phoenix, via U. S. Highway 70.

TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Horseshoe, Verde and Fault claims are situated in the eastern portion of a very rugged, mountainous area. Lime Creek drains easterly through the claims to the Verde River. It follows a narrow canyon, generally having vertical walls from a few feet to more than 100 feet high. Altitudes range from about 2,000 feet at the bed of the creek on Horseshoe No. 1 claim to 5,234 feet at the peak of Humboldt Mountain, about 0.75 mile to the southwest.

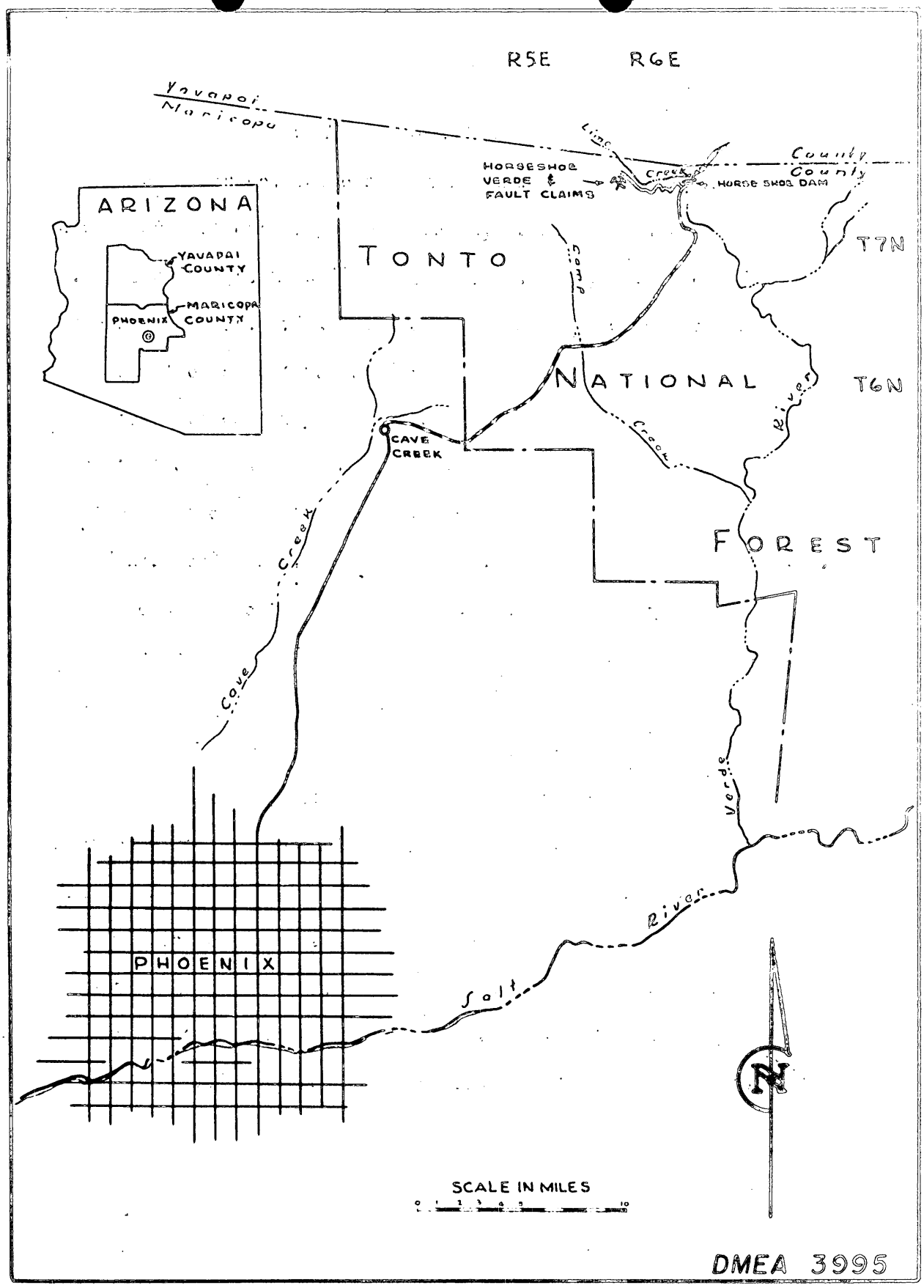

FIG.-1- LOCATION MAP, JACK R. POLLARD & ROBERT H. RAY
MARICOPA & YAVAPAI COUNTIES, ARIZONA

Vegetation is mainly confined to a light growth of forage grasses, cacti and scrubs. A few small groves of oak trees are found along the floor of the canyon.

Annual precipitation of about 12 inches occurs principally as heavy rainfalls during July and August, and as light rain and snowfalls during the winter months. The Verde River is the sole perennial stream in the area. Lime Creek is dry except for a short periods after heavy rains.

Summers are hot and winters are mild.

HISTORY AND PRODUCTION

Uranium was discovered on the claims early in 1955 by Kenneth P. Smith, Elmer Young, and Earl C. Johnson. These men located the claims early in August and reportedly leased the property to the applicant on August 22, 1955. Since then the applicant has built an access road from Horseshoe Dam, completed survey and location work, drilled 40 short diamond drill holes, and driven 10 feet of a proposed 125-foot adit on the Horseshoe No. 1 claim.

The only production from the property is an estimated 10 tons of selected material containing about 0.1 percent U_3O_8. This material was selectively mined from the adit and stocipiled nearby.

EXTENT AND OWNERSHIP OF PROPERTY

The property comprises a group of 41 unpatented lode mining claims, namely Horseshoe Nos. 1 to 20, Verde Nos. 1 to 12, and Fault Nos. 1 to 9 (Figure 2).

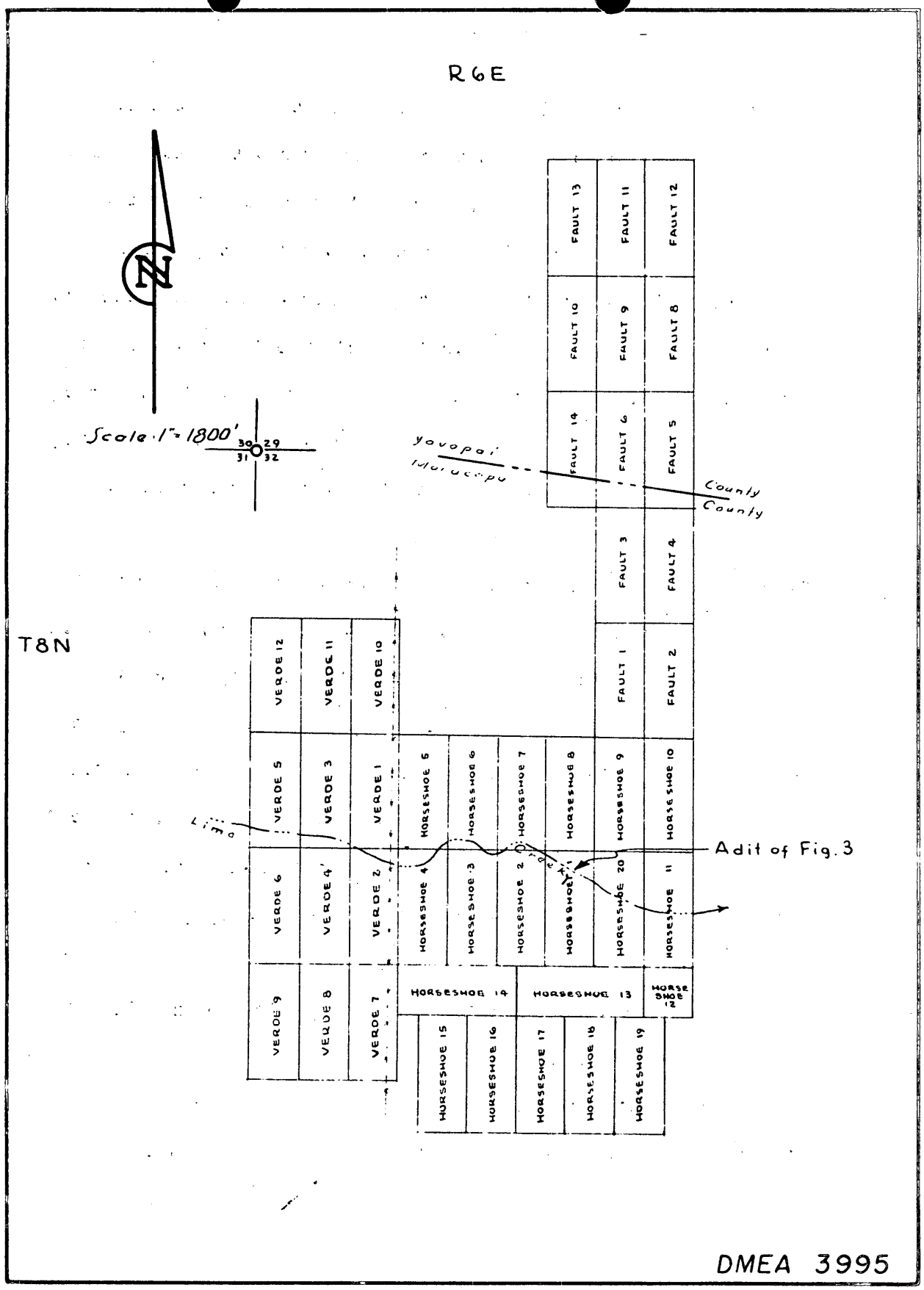

FIG.-2- CLAIM MAP, JACK R POLLARD & ROBERT H RAY

MARICOPA & YAVAPAI COUNTIES, ARIZONA

The reported owners of the claims are:

Name	Claims
Kenneth P. Smith	Horseshoe Nos. 1 to 9, 13, 14, 16, 17, and 20.
Elmer Young	Horseshoe 10 to 12, 15, 18, and 19.
Elmer Young and Earl C. Johnson	All of the Verde and Fault claims.

The applicant reportedly holds all of the above claims under an option and purchase agreement.

PRESENT STATUS

Road Building

The access road reportedly was constructed with a size D-8 bulldozer under a contract that called for total payment of $12.00 per hour. It is about to be realigned at places.

Diamond Drilling

The applicant has done all diamond drilling with its Boyles Bros. X-ray drill and crew. According to Mr. Malherbe, 40 holes were drilled, 12 along the mineralized zone of the adit and 28 at numerous widely scattered sites. No data were available on 10 of the holes at the adit because little or no core or sludge was recovered and the holes had not been probed. The other 2 holes at the adit were drilled to depths of 30 and 117 feet along the strike of the mineralized zone. A composite of sludge and core from the 117-foot hole reportedly contained 0.14 percent U_3O_8. Core and sludge from 10 feet to the bottom of the 30-foot hole reportedly

assayed 0.13 percent U_3O_8. The 28 holes drilled at other sites ranged from 5 to a few tens of feet in depth. Very little core and sludge was recovered from these holes and no zones of significant radioactivity were encountered.

Adit

At present the adit of the application is being driven under a contract with the Brittain-Hendrickson Mining Co., a partnership comprising Dale Brittain of Tucson and Arthur Hendrickson of Oracle, Ariz. The adit enters the south wall of the canyon of Lime Creek and has its floor about 3 feet above the bed of the creek. It had been advanced a total of 10 feet at the time of the examination. A timber set has been installed at the portal. Track extends from the adit to the north side of the creek. A portable 105 CFM compressor, near the portal, furnishes air for drilling with a mounted jackhammer. Detachable bits are used. Water for drilling is obtainedfrom the creek.

It is the writer's opinion that the floor of the adit should have been located at not less than 10 feet above the creek bed. As located, the adit is subject to flooding from heavy rainfalls and the track and a portion of the access road could be washed out. Dump rock may be used to divert flood waters from the adit.

DESCRIPTION OF THE DEPOSIT

Uranium mineralization of possible economic significance appears to be confined to a fault zone in pre-Cambrian granite. The fault zone is traceable on aerial photographs for a thousand feet south of the adit at Lime Creek (figure 4). At the adit, it trends S. 50° W. and dips 75 to 80 degrees southeast. It is about 3.5 feet wide. Uranium probably is confined to a highly altered greenish rock that occurs over a width of approximately 1.5 feet.

A specimen of the greenish rock was examined by LaMar Evans, petrographer, U. S. Bureau of Mines, Tucson, Ariz. He found that a uranium mineral, tentatively identified as uraninite, occurs with calcite, hematite and some chlorite in black veinlets cross-cutting the specimen at random. Selected polished sections showing these veinlets reveal that the uraninite occurs only as stains which permeate the calcite. The specimen was too highly altered for a classification of its rock type.

Grade of Samples from Above Zone

Location	Width (Ft.)	Taken by	Percent eU_3O_8	Percent cU_3O_8
Dump rock		DMEA	0.09	0.09
Adit - face at 10 ft.	1.5	"	0.07	
" " " 4 "	1.5	AEC	0.66	0.50
" Back at 2 ft.	3.5	"	0.14	
" face at 0 ft.	4.0	Applicant		0.48
117 ft. d.d hole along vein	117	"		* 0.14
30 ft. d.d. hole along vein	10-30	"		* 0.13

*Samples reportedly were composite of sludge and core.

ORE RESERVES

The measurable reserves are confined to about 10 tons of stock-piled material containing about 0.1 percent U_3O_8.

Other estimated reserves are confined to a southerly extension of the mineralized zone from the present face of the adit. Based on a strike length of 100 feet along the drill hole, a width of 1.5 feet and a vertical height of 10 feet, the zone contains about 100 tons of rock that probably averages approximately 0.1 percent U_3O_8. These reserves are placed in the inferred catagory because the distribution of values along the drill hole is unknown. The possibility of a significant increase in the reserves appears to be good on the basis of a probable persistence of the strong fault zone. However, too little is known about the behavior of uranium minerals to allow a prediction of the ore possibilities.

OPERATOR'S PROPOSED EXPLORATIONS WITH ESTIMATED COSTS

Application - The proposed explorations of the application as originally received was confined to diamond drilling at several sites. The amount of drilling was not specified and plans of holes were not submitted. The drilling was to be completed in 6 months at an estimated total cost of $21,683.62. A summary of the detailed estimated costs follows:

Labor and supervision - - - -	$14,220.00
Materials and supplies - - -	1,195.90
Equipment depreciation - - -	1,617.72
Equipment rental - - - - - -	600.00
Miscellaneous - - - - - - - -	3,750.00
Contingencies - - - - - - - -	300.00
Estimated total - - - - - - -	$21,683.62

First Amendment - The first amendment proposed the following additional work:

Moving in equipment - - - - -	$600.00
125 ft. drift, 5 ft. by 7 ft. @ $37.50 - - - - - - - - -	4,687.50
Timbering - 12 sets @ $30.00	360.00
Opening 2 crosscuts - - - - -	200.00
Crosscutting 110 ft. @ $32.50	3,575.00
Powder magazine rental - - -	250.00
Road and bridge repairs - - -	2,500.00
Estimated total - - - - - - -	$12,172.50

Second Amendment - This amendment proposed supplementary explorations consisting of 1,000 feet of diamond drilling from the proposed underground workings of Amendment 1. Cost of the work under an Independent Contract was estimated at $7.00 per foot or a total of $7,000.00.

Recapitulation of Estimated Costs

Application - - - - - - - - - -	$21,683.62
First amendment - - - - - - - -	12,172.50
Second amendment - - - - - - -	7,000.00
Estimated total cost - - - -	$40,856.12

RECOMMENDED EXPLORATORY PROJECT

Program

The examining team recommends that explorations be confined to testing of the mineralized fault zone on the Horseshoe No. 1 claim. The work should be carried out in 3 stages (figure 3). The first stage would consist of driving the 125-foot adit proposed

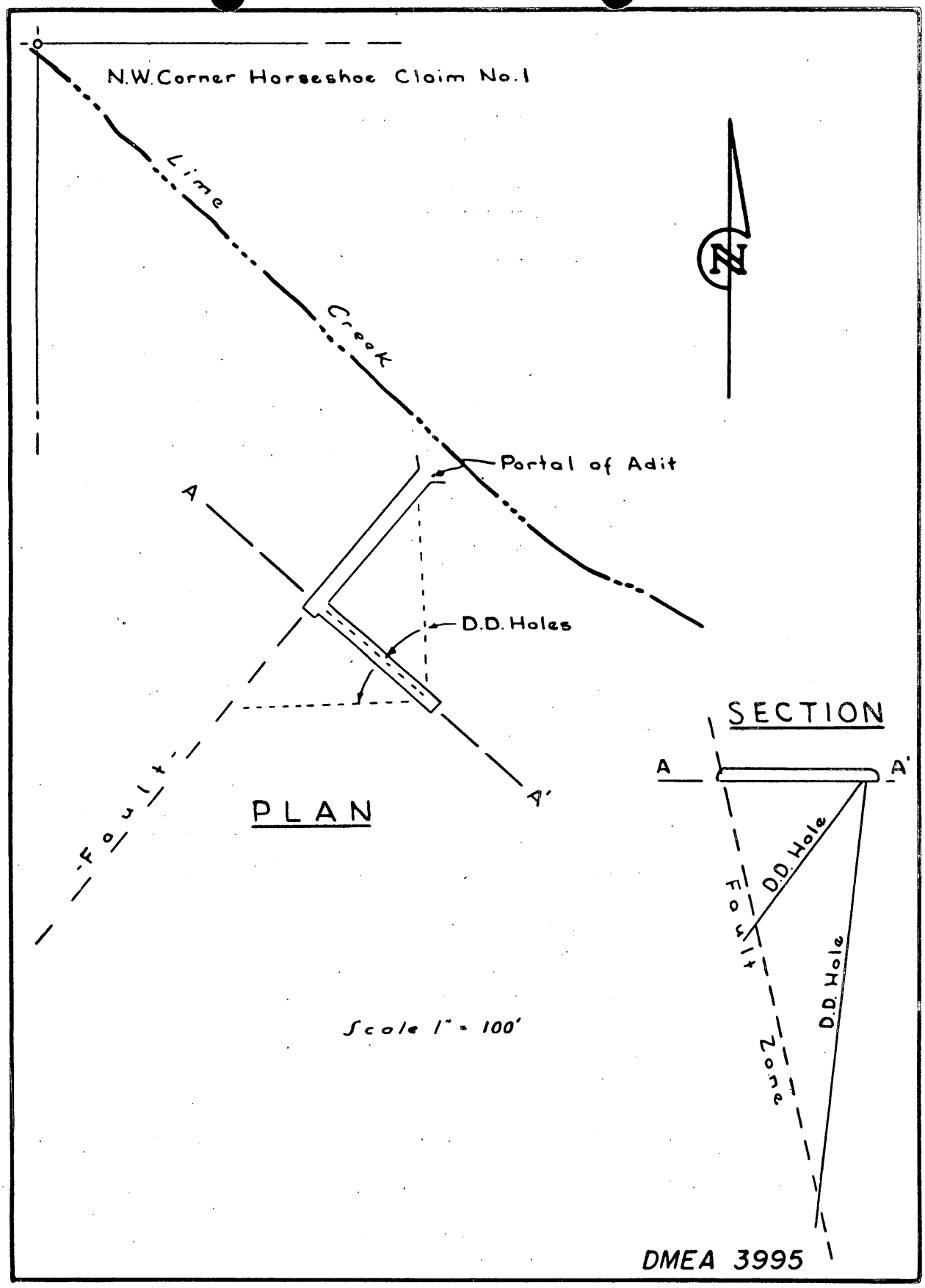

FIG. - 3 - PROPOSED EXPLORATIONS, POLLARD AND RAY

MARICOPA & YAVAPAI COUNTIES, ARIZONA

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by the applicant. The second stage to be carried out if the results of stage 1 are favorable would consist of (1) driving the 100-foot crosscut proposed by the applicant, and (2) drilling 3 diamond drill holes from the end of the crosscut to intersect the mineralized zone at a depth of about 100 feet below the adit. Favorable findings of the second stage then would justify completion of the project by drilling 3 additional diamond drill holes to intersect the vein at a depth of approximately 300 feet below the adit.

Adit - The size of the adit should be 5 by 7 feet in the clear of timber sets which should be installed if needed. Track and pipe lines should be installed.

Crosscut - The size of the crosscut should not be less than 4 by 6 feet. Pipelines for water and air should be installed. Slushing of muck will obviate laying track.

Diamond drill station - A station of a size adequate for the proposed drilling should be excavated near the end of the crosscut. About 40 cubic yards of rock would have to be removed.

Diamond drilling - Drilling from underground is preferred because surface sites are confined to an extremely rough area at elevations of more than 100 feet above the adit. Every effort should be made to obtain core of not less than AX size in the mineralized zone. Drilling should be on a 2-shift, 6-day week basis. Average per day advance of 20 feet is expected.

Supervision - Mr. Malherbe probably will continue to supervise operations. He can be expected to handle the job in a satisfactory manner. A Willys station wagon, owned by the applicant, will be used by Malherbe for travel between the mine and his living quarters at Cave Creek.

Sampling - Samples for assay should be obtained from the face of the adit after each drill-round, and from mineralized sections of drill hole cores.

ESTIMATED COST OF RECOMMENDED PROJECT

First Stage

Independent Contract		
125 ft. of adit - 5 by 7 ft. in the clear @ $37.50 a ft.	$4,687.50	
60 ft. of timbering @ $6.00 a ft.	360.00	
Total		$5,047.50
Supervision		
One month @ $500.00		500.00
Equipment		
Depreciation on 1955 Willys Station Wagon, 1/60 of $2,400.00 (estimated value)		30.00
Miscellaneous		
Fuel and up-keep of Station Wagon, 1,200 miles @ $0.07 per mile		84.00
Assays, 30 @ $3.50		105.00
Total estimated cost		$5,766.50

According to Mr. Brittain, the unit costs of drifting and timbering are those in effect. In my opinion, the unit costs are reasonable in view of the remoteness of the operation and the small footage of driving involved.

Second Stage

Independent Contracts

110 ft. of crosscutting - 4 by 6 ft. @ $32.50	$3,575.00	
Drill station - one job	200.00	
Diamond drilling - 3 holes for total of 550 ft. @ $7.00 per ft.	3,850.00	
		$7,625.00

Supervision

1.5 months @ 500.00 a month	750.00

Equipment

1.5 months depreciation on item of Stage I	45.00

Miscellaneous

Fuel and upkeep of equipment, 1,800 miles @ $0.07 a mile	126.00
Assays, 6 @ $3.50	21.00
Total estimated cost	$8,567.00

Third Stage

Independent Contract

Diamond drilling - 3 holes for total of 1,050 feet @ $7.00 per ft.	$7,350.00

Supervision

2.5 months @ $500 per month	1,250.00

Equipment

2.5 months depreciation on	75.00

Miscellaneous

Fuel and upkeep of equipment, 3,000 miles @ 0.07 a mile	210.00
Assays, 6 @ $3.50	21.00
Total	$8,906.00

Recapitulation of Estimated Costs

Stage	Independent Contracts	Supervision	Equipment	Miscel.	Total
1	$5,047.50	$500.00	$30.00	$189.00	$5,766.50
2	7,625.00	750.00	45.00	147.00	8,567.00
3	7,350.00	1,250.00	75.00	231.00	8,906.00
Totals	$20,022.50	$2,500.00	$150.00	$567.00	$23,239.50

CONCLUSIONS

A strong and persistent fault zone on the Horseshoe No. 1 claim carries near-commercial values of uranium where it has been explored by a short adit. The showing merits exploration to determine if good uranium values persist along both the strike and dip of the fault zone.

The recommended 3-stage exploratory project is a feasible method of testing a portion of the potential ore zone. Under the project, unfavorable findings could result in termination of operations upon completion of either stage 1 or stage 2.

The applicant has started driving the adit of Stage 1 and probably will have completed the adit and crosscut of stage 2 before a contract for Governmental participation in the costs of the remaining work can be prepared.

RECOMMENDATION

Approval is recommended in a proposed exploratory project for uranium on the Horseshoe No. 1 claim. As the applicant has started work and probably will have completed much of the proposed work, Governmental participation in costs will be substantially less than the estimated total cost of $23,239.50.

1-19-56 Lgm

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

January 11, 1956

224 New Customhouse
Denver 2, Colorado

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JAN 19 1956

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Field Team, Region III

Subject: Report of Examination, Docket DMEA 3995 (Uranium), Jack R. Pollard and Robert H. Ray, Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Enclosed are the original and three copies of the Report of Examination on the subject property.

The field examiners recommend a three-stage exploration program at an estimated cost of $23,239.50.

The DMEA Field Team, Region III is on record against Government aid on bedded deposits containing appreciably less than 0.1% U_3O_8 so can not consistently recommend aid on a vein deposit which will require exploitation by underground mining methods of potential reserves which are somewhat less than significant. We are not fully convinced that exploration of the subject property is warranted.

DMEA Field Team, Region III

W. M. Traver

W. M. Traver

K. H. Harshman

K. H. Harshman

Enclosures

Reviewed by
DMEA OPERATING COMMITTEE

1-23-56
(date)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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JAN 19 1956

Defense Minerals Exploration Administration
Denver Federal Center
Denver, Colorado

January 5, 1956

Memorandum

TRANSMITTED
JAN 11 1956

To: Executive Officer, DMEA Field Team, Region III

From: E. N. Harshman

Subject: DMEA 3995 (Uranium), Jack R. Pollard and Robert H. Ray (Horseshoe, Verde, and Fault claims), Maricopa and Yavapai Counties, Arizona.

Enclosed are the original and nine copies of a geologic report by Leonid Bryner, U. S. Geological Survey, covering his examination of the subject property.

For reasons as follow I am not fully convinced that exploration of the subject property is warranted:

1. Uraninite occurs "only as stains which permeate calcite" in a greenish rock which may represent a dike in a fault zone. Drilling has indicated that this rock may terminate about 114 feet beyond the face of the present short adit on the Horseshoe No. 1 claim.

2. Although high uranium assays (0.14 percent to 0.66 percent U_3O_8) were reported from samples taken by the A. E. C. near the portal of the adit, Bryner concludes that these assays represent material from a zone of surface enrichment. On the basis of samples taken by the examiners in the face of the adit and the results of drilling by the applicant Bryner estimates the uranium-bearing material contains an average of 0.10 percent U_3O_8 over a width of 1-1/2 feet.

Reviewed by
DMEA OPERATING COMMITTEE
1-23-56

3. The geologic data presented in the report indicate that exploration may lead to the discovery of additional mineralized material similar in width and grade to that already found.

4. Considering the fact that this is a vein deposit, and will require exploitation by underground mining methods it appears that the potential reserves are somewhat less than significant, and that these reserves are not "commercial to near commercial" as stated in the Conclusions and Recommendations of the Bryner report.

E. N. Harshman

E. N. Harshman
Member, Field Team

Enclosures (10)

ENHarshman:mp

DMEA
Date Rec'd.

JAN 6 1956

BUREAU OF MINES
Denver, Colorado

MINERAL DEPOSITS
DMEA
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JAN 3 1956
U.S.
GEOLOGICAL SURVEY
DENVER, COLORADO

Box 4126 University Station
Tucson, Arizona

December 27, 1955

MEMORANDUM

TRANSMITTED
JAN 11 1956

TO: Mr. E. N. Harshman

FROM: J. N. Faick

SUBJECT: DMEA 3995 (Uranium), Horseshoe, Verde and Fault Group, Maricopa and Yavapai County, Arizona; R. H. Ray and J. C. Pollard, applicants.

Enclosed are the original and 10 copies of a report of examination of the above subject property by Leonid Bryner. This report recommends approval of Government participation in exploration because of the possibility that primary uranium ore in minable widths and grade may persist along a prominent fault on the Horseshoe No. 1 claim.

This report and the recommendation of Government participation in exploration have my approval.

J. N. Faick

J. N. Faick

JNF:ms

cc: Harshman (10)
Storms

U. S. DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

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FIELD TEAM, REGION III

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JAN 11 1956

GEOLOGY

EXAMINATION REPORT

DMEA 3995

HORSESHOE, VERDE, AND FAULT GROUP, MARICOPA AND YAVAPAI COUNTY, ARIZONA

R. H. RAY AND J. C. POLLARD, APPLICANTS

(Uranium)

By
Leonid Bryner
Geologist
U. S. Geological Survey

DMEA OPERATING COMMITTEE
1-23-56
(date)

December 23, 1955

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
FIELD TEAM III

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EXAMINATION REPORT

DMEA 3995
HORSESHOE, VERDE, AND FAULT GROUP,
MARICOPA AND YAVAPAI COUNTY, ARIZONA
(Uranium)

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ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Proposed Exploration	" " "
Fig. 4	Geologic Map	Following page 8

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INTRODUCTION

On September 21, 1955 R. H. May and J. C. Pollard applied for Defense Minerals Exploration Administration aid in a $33,856 program to explore for uranium on the Horseshoe, Verde, and Fault claims.

The claims are located about 2 airline miles west of Horseshoe Dam on the Verde River, Arizona. They cross the line between Maricopa and Yavapai Counties. Although the claims are 45 in number, only those on Lime Creek are the sites of proposed exploration, and of these, only the Horseshoe No. 1 claim contains ground which appears to merit exploration. The turnoff to the property is 0.6 miles downstream from Horseshoe Dam, and a rough road leads 2½ miles west from this turnoff to the Horseshoe No. 1 claim.

The claims are unpatented. They are the property of K. F. Smith, E. W. Young, and E. C. Johnson. May and Pollard are the lessees.

The examination was made on November 29 by T. M. Romalo of the U. S. Bureau of Mines, and by the writer. J. G. Malherbe, geologist and representative for the applicant, conducted us over the ground.

The property is not described in the literature as it is a new discovery. It has been examined, however, by M. L. Reyner, chief, Phoenix Sub-office of the Salt Lake Exploration Branch of AEC. Both J. N. Faick, of the U. S. Geological Survey, and I discussed the property with Reyner.

In a letter to Faick, dated November 30, 1955, and referring to the showing on the Horseshoe No. 1, Reyner says:

> "Since the structure is fairly strong, with considerable alteration, and uranium ore is present, the prospect definitely warrants further exploration work."

GEOLOGY

Lime Creek in this area flows east into the Verde River. The claims lie along Lime Creek, about where the creek leaves the mountains and flows into the Verde valley. In the claim area the rock is almost entirely Precambrian (?) granite. It contains a few altered mafic dikes, and at the east edge of the claim area is overlapped by Tertiary (?) gravels. The gravels north of Lime Creek, near their contact with the granite, are tilted almost vertically in places. This tilting is near a northerly trending fault that is easily recognized by a scarp in the granite (fig. 4). The course taken by this fault, as seen in aerial photographs, indicates that it dips steeply east. Though it apparently has disturbed the gravels north of Lime Creek, the fault is not evident on the photographs south of Lime Creek. Presumably some of the gravels exposed south of the creek are younger than the fault, and cover it. The southerly projection of this fault is near or possibly within the most easterly claims of the group, though I did not recognize the fault on the ground in the claim area. Other structures within the granite are also recognizable in aerial photographs. The most interesting of these, from the standpoint of uranium mineralization, is a southwesterly-trending lineament that crosses Lime Creek near the center line of the Horseshoe No. 1 claim and is traceable on the photograph for about a thousand feet south of the creek. This lineament probably corresponds to the fault zone that contains the main uranium showing of the property.

The main mineralized zone has been opened by a ten-foot adit into the south bank of Lime Creek at about the level of the bed of the creek (fig. 4). The adit is being driven in the above-mentioned fault zone where it trends S50°W and dips 75 to 80 degrees southeast. The fault zone is about 3½ feet wide and is occupied in part by an irregular mass of highly altered, slickensided greenish rock that may represent an altered dike.

Uranium seems to be confined to the greenish rock though no radioactive minerals were recognized in the field. The most radioactive parts of the rock display coatings of a black, amorphous mineral. A specimen containing this ore mineral was submitted to LaMar G. Evans, mineralogist with the U. S. Bureau of Mines. Evans' report is quoted below:

> "Microscopic examination of thin sections and polished surfaces reveals that this sample is composed essentially of chlorite, quartz, calcite, sericite and small amounts of hematite, pyrite, ilmenite, oligoclase and a uranium mineral tentatively identified as uraninite. The chlorite, quartz, sericite and calcite are intergrown with each other and in most areas are extremely fine-grained. Under the microscope these minerals appear to have been partially altered and then resolidified by additional calcite and quartz.
>
> "The uraninite occurs with calcite, hematite and some chlorite in small black veinlets crosscutting the specimen at random. Studies of selected polished surfaces showing these veinlets reveal that the uraninite occurs only as stains which permeate the calcite."

Diamond drilling has shown that the radioactive greenish rock extends underground along the strike for at least 114 feet. At this distance from the face the drill cut granite. This may have been due either to the drill drifting off its target or to termination of the rock. The persistence of the fault zone, however, suggests that there is a good possibility of finding the favorable host rock for at least several hundred feet along the strike.

The extension of the radioactive zone at depth is unknown. The applicant has drilled several holes into the floor of the adit but no core or sludge was recovered from these holes. The extension of the radioactive zone above the adit likewise is unknown; though there probably is as much as 100 feet of backs above the adit.

The long diamond drill hole into the face of the adit (fig. 4) yields a small flow of water. This, combined with the fact that the adit is only a few feet above stream level, suggests that it is slightly below the water table. Evaporation of the groundwater near the outcrop may have raised the uranium content near the outcrop. This might account for the higher assays obtained by the applicant and by AEC when the adit had been advanced less than four feet into the bank of Lime Creek. If a zone of enrichment such as this is the explanation of these higher values, then it appears that the present 10-foot depth of the adit is sufficient to have penetrated this zone, as the sampling of the present face gives lower results on the order of the lower results obtained from the long diamond-drill hole.

Several showings, somewhat similar to the one described, occur upstream and downstream from the adit (fig. 4). None of these, however, occupies such a distinct and persistent fault zone, and none of them shows much more than trace uranium mineralization.

GRADE

No ore has been shipped from this property, though several tons of low-grade, extracted from the adit, are stored near the portal. U. S. Bureau of Mines Sample No. 12780, taken from this pile of low-grade

ore during the examination, assayed 0.09 percent U_3O_8, both chemically and radiometrically. Another U. S. Bureau of Mines sample, No. 12781, was taken across the greenish rock in the face of the 10-foot adit (fig. 4). This sample, representing a width of 1½ feet, assayed radiometrically 0.07 percent U_3O_8. No chemical assay was made.

A composite of sludge from the 117-foot horizontal diamond drill hole drilled southwest from the face of the adit assayed chemically 0.14 percent U_3O_8; the interval from 5 to 70 feet contained 0.12 percent. The sludge from another hole at the adit face drilled to a depth of 30 feet in approximately the same direction but at an inclination of -5 degrees, assayed chemically 0.13 percent U_3O_8 for the interval from 10 to 30 feet.

Reyner in his letter reports that when the adit was 4 feet long one AEC sample, across 1.5 feet of the face, assayed 0.66 percent eU_3O_8 and 0.50 percent cU_3O_8, and another across 3.5 feet of the back, two feet in from the portal, assayed 0.14 percent eU_3O_8. The applicant reports that a 48-inch channel sample across the mineralized zone assayed 0.16 percent cU_3O_8. This sample probably was taken before the adit had been driven. For the reasons pointed out on page 4, the higher assays probably represent the grade of the mineralized zone only near the surface.

RESERVES

The single horizontal diamond-drill hole on the Horseshoe No. 1 claim provides a basis for a small reserve estimate. There can be considerable question as to the distribution of actual values in this hole. For that reason the reserve based on this hole is classified as inferred rather than indicated or measured. Using a distance along the hole of 100 feet, a width of ore of 1½ feet, and a vertical extent of 10 feet, gives about 100 tons of inferred reserves. This rock probably averages about 0.1 percent U_3O_8.

The possibility of finding more reserves by exploration along the strike seems to be good, as the structure appears to be strong and persistent in that direction. The behavior of ore at depth is still too problematical to allow a prediction of reserve possibilities down-dip from the adit. But exploration in this direction probably would yield the most information about the potentialities of this deposit. Nothing is known of the uranium content of the rock above the adit. It is possible, however, that leaching of the ground above the adit has made this rock submarginal in grade.

EXPLORATION

The applicant's amended exploration proposal on the Horseshoe No. 1 claim, further modified after discussion with Romslo and the writer, consists of drifting 125 feet along the fault, then crosscutting to the southeast 110 feet, and cutting a diamond drill station at the end of the crosscut. From this station the applicant

proposes to drill 6 holes; 3 to cut the fault at 100-foot intervals at a depth of 100 feet, and 3 to cut it at 100-foot intervals at a depth of 300 feet. The work proposed from the adit should be in three stages as follows: (1) driving the adit, (2) crosscutting from the adit and drilling the three shallower holes, (3) drilling the three deeper holes.

It is likely that stages (1) and (2) would be completed before a DMEA contract could be arranged. But in case either of these stages is not completed at that time, the showings revealed by the current stage should decide whether the next exploration stage is justified.

The applicant's plan also includes drilling near other showings on the property. These other showings, however, are considerably less promising-looking than the adit on the Horseshoe No. 1 claim. Details of this additional proposed work are not included here as government participation in this part of the applicant's program is not recommended.

CONCLUSIONS AND RECOMMENDATIONS

The fault zone on the Horseshoe No. 1 claim merits exploration approximately as suggested by the applicant because:

(1) The best available information indicates that the deposit contains commercial to near-commercial values of uranium in widths of about one and one-half feet.

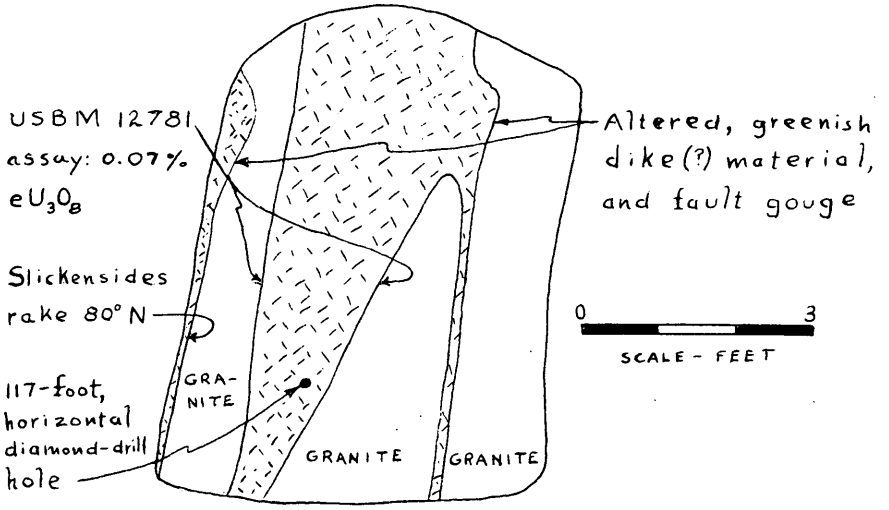
(2) The deposit is in a distinct and persistent fault zone and therefore might contain correspondingly persistent uranium mineralization;

(3) The probability of uraninite being the ore mineral suggests that the deposit is not simply a near-surface concentration of uranium.

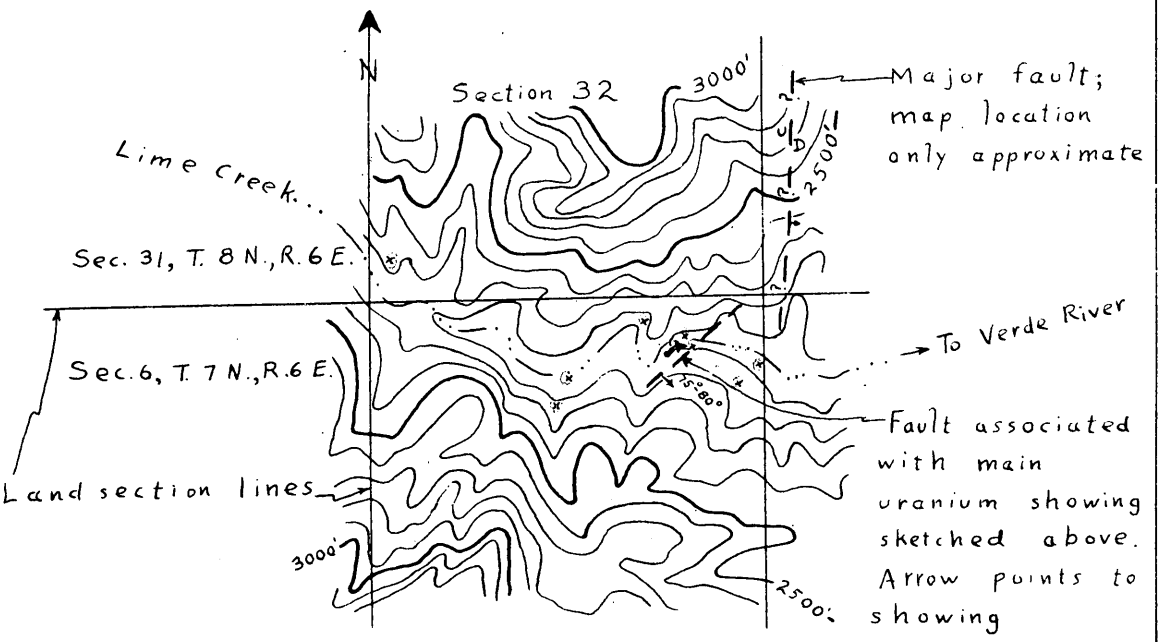
(4) The exploration plan is a reasonable one, and the operator seems technically as well as financially able to complete it;

(5) The exploration program is a relatively inexpensive one, especially as a large part of the work is likely to be completed before a DMEA contract can be arranged.

It is recommended, therefore, that the applicant be granted a DMEA contract.



SKETCH, LOOKING SW AT FACE OF 10-FOOT ADIT, HORSESHOE NO. 1 CLAIM, MARICOPA CO.
(Location is shown below by heavy arrow)



Approximate location of anomalous radioactivity shown by crosses colored red.

Map is enlarged from USGS Cave Creek Quadrangle

FIG 4. - GEOLOGIC MAP OF HORSESHOE, VERDE, AND FAULT CLAIM AREA, MARICOPA CO., ARIZ.

DMEA-3995

RECEIVED
JAN 1 9 1956

DMEA
Date Rec'd.
DEC 29 1955
BUREAU OF MINES
Denver, Colorado

RECEIVED
JAN 19 1956

Box 4097
Tucson 5, Arizona

December 27, 1955

Memorandum

To : W. M. Traver, Executive Officer, DMEA Field Team, Region III

From : Superintendent, Southwest Experiment Station

TRANSMITTED
JAN 11 1956

Subject : Field Examination Report, Project DMEA-3095, Jack R. Pollard & Robert H. Ray, Hurricane, Verde and Fault Uranium Claims, Maricopa and Yavapai Counties, Ariz.

Enclosed are original and 10 copies of the section on Summary, Conclusions and Recommendations by T. M. Rasmussen of the Bureau of Mines and L. Reid Beyer of the Geological Survey, and the section on Engineering by Rasmussen for the above report. A separate section on Geology will be submitted by the Survey.

As there seems to be a good chance to discover a significant amount of uranium ore by the proposed exploratory work, the DMEA committee recommend that Government aid be provided the applicants. I concur with this recommendation.

Brochure is enclosed.

Walter R. Storms

Walter R. Storms

CC W. M. Traver (10)
J. M. Faick
DMEA-3095
SF

WRStorms:fr:j

Reviewed by
DMEA OPERATING COMMITTEE

(date)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DOUGLAS McKAY, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

TRANSMITTED

JAN 11 1956

DMEA-3995, Jack R. Pollard's and Hobart H. Ray's Horsehead, Verde, and Fault Uranium Claims Maricopa and Yavapai Counties, Arizona

T. M. Romalo, Mining Engineer
U. S. Bureau of Mines

Leonid Bryner, Geologist
U. S. Geological Survey

December 1955

Reviewed by
DMEA OPERATING COMMITTEE

_____
(date)

TRANSMITTED

JAN 11 1956

SUMMARY, CONCLUSIONS, AND RECOMMENDATION

By T. H. Romslo[1] and Leonid Bryner[2]

The Horseshoe, Verde, and Fault claims in Maricopa and Yavapai Counties, Ariz. were examined for uranium by the Defense Minerals Exploration Administration in connection with an application for Government aid by Jack R. Pellard and Robert H. Ray. The application was docketed as DMEA-3995. It requested aid in exploring the property by driving an adit and crosscut and by both surface and underground diamond drilling. Total cost of the work was estimated at $40,856.12.

Uranium was discovered on the claims early in 1955. Since then, an access road has been built, numerous short diamond drill holes put down, and an adit started. At present, exploratory work is largely confined to driving the adit. Approximately 10 tons of material containing about 0.1 percent U_3O_8 has been produced and stockpiled on the property.

Known uranium mineralization of possible economic importance is confined to a strong and persistent fault zone in granite. In the adit, 10 feet long at the time of this examination, the fault zone trends S. 50° W. and dips 75 to 80 degrees southeast. It is about 3.5 feet wide. Uranium mineralization appears to be

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1/ Mining Engineer, U. S. Bureau of Mines
2/ Geologist, U. S. Geological Survey

confined to 1.5 feet of highly altered greenish rock within the fault zone. Uraninite has been tentatively identified in the ore, but no secondary uranium minerals have been recognized.

A diamond drill hole from the face of the adit follows the greenish rock along the fault for about 114 feet. The sludge from this hole averaged 0.14 percent U_3O_8. On the basis of this hole a reserve of about 100 tons of 0.1 percent U_3O_8 are inferred for the deposit. The possibility of increasing the reserves by exploration seems promising enough to warrant a small project.

The project recommended by the examiners is planned in three stages and estimated to cost $23,239.50. The applicants have already begun exploration work, so a major part of this work will most likely be completed at their own expense before a AMEA contract can be drawn up.

JAN 10 '56
RECEIVED

DMEA-3995, JACK R. POLLARD'S AND ROBERT H. RAY'S HORSESHOE, VERDE AND FAULT URANIUM CLAIMS MARICOPA AND YAVAPAI COUNTIES, ARIZONA

TRANSMITTED

JAN 11 1956

Engineering Report

By T. M. Romalo
Mining Engineer
U. S. Bureau of Mines

December 1955

IGRA-3996, JACK R. PELLIER'S AND ROBERT H. RAY'S
HUMBOLDT, VERDE AND PARLY MARTIN CLAIMS
MARICOPA AND YAVAPAI COUNTIES, ARIZONA

JAN 15 1953

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ILLUSTRATIONS

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1	Location map	2
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4	Geologic map	(See geologic report)

INTRODUCTION

Jack R. Pollard and Robert N. Ray submitted an application to the Defense Minerals Exploration Administration for aid in exploring for uranium on the Horseshoe, Verde, and Fault claims in Maricopa and Yavapai Counties, Ariz. The application was docketed as DMEA-3995, reviewed by the Operating Committee, then sent to the Field Team of Region III for examination of the property.

The application, as originally received on September 23, 1955, requested aid in a proposed diamond drilling project costing an estimated $21,683.62. A proposed amendment of October 27, 1955 proposed supplemental explorations involving drifting and cross-cutting at an estimated cost of $12,172.50. A second requested amendment of Dec. 2, 1955 proposed that the total estimated cost of the project be increased to $40,856.12 by the addition of $7,000.00 for supplemental diamond drilling.

Field investigations were carried out on Nov. 29, 1955 by Leonid Bryner, geologist, U. S. Geological Survey and T. M. Romalo, mining engineer, U. S. Bureau of Mines. The examining team was accompanied by the applicant's representative, J. G. Malherbe.

The property had been examined by a geologist for the Atomic Energy Commission. Findings of the investigation were furnished to the DMEA examining team.

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JAN 19 1956

LOCATION AND ACCESSIBILITY

The Horseshoe, Verde and Fault mining claims are about 47 air miles northeasterly from Phoenix, Ariz. in sec. 5, T. 7 N., R. 6 E. and secs. 29 and 32, T. 8 N., R. 6 E., Maricopa and Yavapai Counties, Ariz. (figure 1). They may be reached from Phoenix, the nearest railroad shipping point, by traveling about 40 miles northeasterly on the paved portion of the Horseshoe Dam road to the village of Cave Creek. Proceed 25 miles on the graded portion of the road to the Dam, then follow a westerly trending bulldozer road for 2.8 miles to the adit on Horseshoe Claim No. 1.

The Government's nearest uranium purchasing depot is at Cutter, Ariz., a railroad siding 97 miles east of Phoenix, via U. S. Highway 70.

TOPOGRAPHY, PHYSICAL FEATURES AND CLIMATE

The Horseshoe, Verde and Fault claims are situated in the eastern portion of a very rugged, mountainous area. Lime Creek drains easterly through the claims to the Verde River. It follows a narrow canyon, generally having vertical walls from a few feet to more than 100 feet high. Altitudes range from about 2,000 feet at the bed of the creek on Horseshoe No. 1 claim to 5,234 feet at the peak of Humboldt Mountain, about 0.75 mile to the southwest.

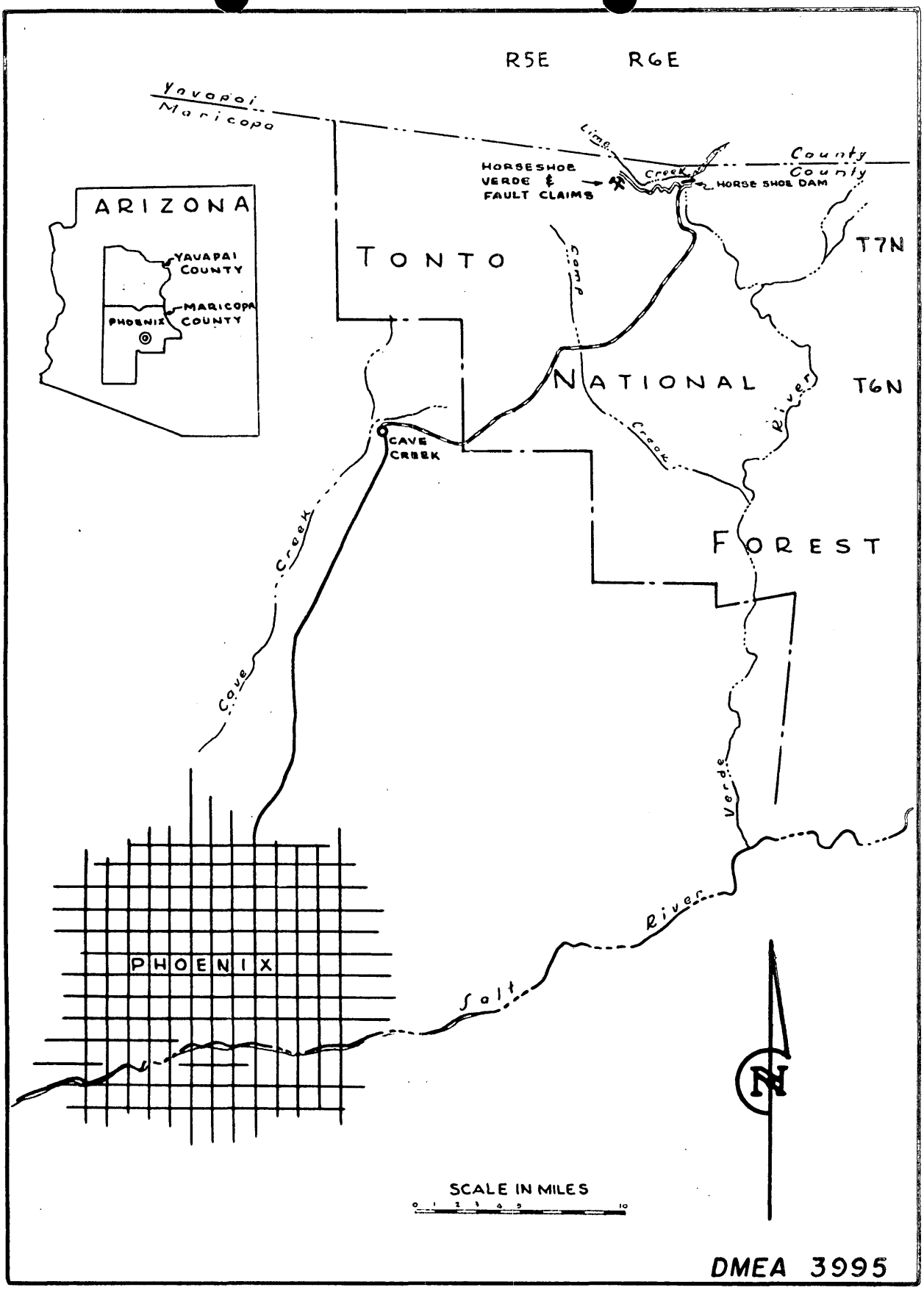

FIG.-1- LOCATION MAP, JACK R. POLLARD & ROBERT H. RAY
MARICOPA & YAVAPAI COUNTIES, ARIZONA

Vegetation is mainly confined to a light growth of forage grasses, cacti and scrubs. A few small groves of oak trees are found along the floor of the canyon.

Annual precipitation of about 12 inches occurs principally as heavy rainfalls during July and August, and as light rain and snowfalls during the winter months. The Verde River is the sole perennial stream in the area. Lime Creek is dry except for short periods after heavy rains.

Summers are hot and winters are mild.

HISTORY AND PRODUCTION

Uranium was discovered on the claims early in 1955 by Kenneth F. Smith, Elmer Young, and Earl C. Johnson. These men located the claims early in August and reportedly leased the property to the applicant on August 22, 1955. Since then the applicant has built an access road from Horseshoe Dam, completed survey and location work, drilled 40 short diamond drill holes, and driven 10 feet of a proposed 125-foot adit on the Horseshoe No. 1 claim.

The only production from the property is an estimated 10 tons of selected material containing about 0.1 percent U_3O_8. This material was selectively mined from the adit and stockpiled nearby.

EXTENT AND OWNERSHIP OF PROPERTY

The property comprises a group of 41 unpatented lode mining claims, namely Horseshoe Nos. 1 to 20, Verde Nos. 1 to 12, and Fault Nos. 1 to 9 (Figure 2).

The reported owners of the claims are:

Name	Claims
Kenneth P. Smith	Horseshoe Nos. 1 to 9, 13, 14, 16, 17, and 20.
Elmer Young	Horseshoe 10 to 12, 15, 18, and 19.
Elmer Young and Earl C. Johnson	All of the Verde and Fault claims.

The applicant reportedly holds all of the above claims under an option and purchase agreement.

PRESENT STATUS

Road Building

The access road reportedly was constructed with a size D-8 bulldozer under a contract that called for total payment of $12.00 per hour. It is about to be realigned at places.

Diamond Drilling

The applicant has done all diamond drilling with its Boyles Bros. X-ray drill and crew. According to Mr. Malherbe, 40 holes were drilled, 12 along the mineralized zone of the adit and 28 at numerous widely scattered sites. No data were available on 10 of the holes at the adit because little or no core or sludge was recovered and the holes had not been probed. The other 2 holes at the adit were drilled to depths of 30 and 117 feet along the strike of the mineralized zone. A composite of sludge and core from the 117-foot hole reportedly contained 0.14 percent U_3O_8. Core and sludge from 10 feet to the bottom of the 30-foot hole reportedly

assayed 0.13 percent U_3O_8. The 28 holes drilled at other sites ranged from 5 to a few tens of feet in depth. Very little core and sludge was recovered from these holes and no zones of significant radioactivity were encountered.

Adit

At present the adit of the application is being driven under a contract with the Brittain-Hendrickson Mining Co., a partnership comprising Dale Brittain of Tucson and Arthur Hendrickson of Oracle, Ariz. The adit enters the south wall of the canyon of Lime Creek and has its floor about 3 feet above the bed of the creek. It had been advanced a total of 10 feet at the time of the examination. A timber set has been installed at the portal. Track extends from the adit to the north side of the creek. A portable 105 CFM compressor, near the portal, furnishes air for drilling with a mounted jackhammer. Detachable bits are used. Water for drilling is obtainedfrom the creek.

It is the writer's opinion that the floor of the adit should have been located at not less than 10 feet above the creek bed. As located, the adit is subject to flooding from heavy rainfalls and the track and a portion of the access road could be washed out. Dump rock may be used to divert flood waters from the adit.

DESCRIPTION OF THE DEPOSIT

Uranium mineralization of possible economic significance appears to be confined to a fault zone in pre-Cambrian granite. The fault zone is traceable on aerial photographs for a thousand feet south of the adit at Lime Creek (figure 4). At the adit, it trends S. 50° W. and dips 75 to 80 degrees southeast. It is about 3.5 feet wide. Uranium probably is confined to a highly altered greenish rock that occurs over a width of approximately 1.5 feet.

A specimen of the greenish rock was examined by LaMar Evans, petrographer, U. S. Bureau of Mines, Tucson, Ariz. He found that a uranium mineral, tentatively identified as uraninite, occurs with calcite, hematite and some chlorite in black veinlets cross-cutting the specimen at random. Selected polished sections showing these veinlets reveal that the uraninite occurs only as stains which permeate the calcite. The specimen was too highly altered for a classification of its rock type.

Grade of Samples from Above Zone

Location	Width (Ft.)	Taken by	Percent eU_3O_8	Percent cU_3O_8
Dump rock		DMEA	0.09	0.09
Adit - face at 10 ft.	1.5	"	0.07	
" " " 4 "	1.5	AEC	0.66	0.50
" Back at 2 ft.	3.5	"	0.14	
" face at 0 ft.	4.0	Applicant		0.48
117 ft. d.d hole along vein	117	"		* 0.14
30 ft. d.d. hole along vein	10-30	"		* 0.13

*Samples reportedly were composite of sludge and core.

ORE RESERVES

The measurable reserves are confined to about 10 tons of stock-piled material containing about 0.1 percent U_3O_8.

Other estimated reserves are confined to a southerly extension of the mineralized zone from the present face of the adit. Based on a strike length of 100 feet along the drill hole, a width of 1.5 feet and a vertical height of 10 feet, the zone contains about 100 tons of rock that probably averages approximately 0.1 percent U_3O_8. These reserves are placed in the inferred catagory because the distribution of values along the drill hole is unknown. The possibility of a significant increase in the reserves appears to be good on the basis of a probable persistence of the strong fault zone. However, too little is known about the behavior of uranium minerals to allow a prediction of the ore possibilities.

OPERATOR'S PROPOSED EXPLORATIONS WITH ESTIMATED COSTS

Application - The proposed explorations of the application as originally received was confined to diamond drilling at several sites. The amount of drilling was not specified and plans of holes were not submitted. The drilling was to be completed in 6 months at an estimated total cost of $21,683.62. A summary of the detailed estimated costs follows:

Labor and supervision - - - -	$14,220.00
Materials and supplies - - -	1,195.90
Equipment depreciation - - -	1,617.72
Equipment rental - - - - - -	600.00
Miscellaneous - - - - - - - -	3,750.00
Contingencies - - - - - - - -	300.00
Estimated total - - - - - - -	$21,683.62

First Amendment - The first amendment proposed the following additional work:

Moving in equipment - - - - -	$600.00
125 ft. drift, 5 ft. by 7 ft. @ $37.50 - - - - - - - - -	4,687.50
Timbering - 12 sets @ $30.00	360.00
Opening 2 crosscuts - - - - -	200.00
Crosscutting 110 ft. @ $32.50	3,575.00
Powder magazine rental - - -	250.00
Road and bridge repairs - - -	2,500.00
Estimated total - - - - - - -	$12,172.50

Second Amendment - This amendment proposed supplementary explorations consisting of 1,000 feet of diamond drilling from the proposed underground workings of Amendment 1. Cost of the work under an Independent Contract was estimated at $7.00 per foot or a total of $7,000.00.

Recapitulation of Estimated Costs

Application - - - - - - - - - -	$21,683.62
First amendment - - - - - - -	12,172.50
Second amendment - - - - - -	7,000.00
Estimated total cost - - - -	$40,856.12

RECOMMENDED EXPLORATORY PROJECT

Program

The examining team recommends that explorations be confined to testing of the mineralized fault zone on the Horseshoe No. 1 claim. The work should be carried out in 3 stages (figure 3). The first stage would consist of driving the 125-foot adit proposed

by the applicant. The second stage to be carried out if the results of stage 1 are favorable would consist of (1) driving the 100-foot crosscut proposed by the applicant, and (2) drilling 3 diamond drill holes from the end of the crosscut to intersect the mineralized zone at a depth of about 100 feet below the adit. Favorable findings of the second stage then would justify completion of the project by drilling 3 additional diamond drill holes to intersect the vein at a depth of approximately 300 feet below the adit.

Adit - The size of the adit should be 5 by 7 feet in the clear of timber sets which should be installed if needed. Track and pipe lines should be installed.

Crosscut - The size of the crosscut should not be less than 4 by 6 feet. Pipelines for water and air should be installed. Slushing of muck will obviate laying track.

Diamond drill station - A station of a size adequate for the proposed drilling should be excavated near the end of the crosscut. About 40 cubic yards of rock would have to be removed.

Diamond drilling - Drilling from underground is preferred because surface sites are confined to an extremely rough area at elevations of more than 100 feet above the adit. Every effort should be made to obtain core of not less than AX size in the mineralized zone. Drilling should be on a 2-shift, 6-day week basis. Average per day advance of 20 feet is expected.

Supervision - Mr. Malherbe probably will continue to supervise operations. He can be expected to handle the job in a satisfactory manner. A Willys station wagon, owned by the applicant, will be used by Malherbe for travel between the mine and his living quarters at Cave Creek.

Sampling - Samples for assay should be obtained from the face of the adit after each drill-round, and from mineralized sections of drill hole cores.

ESTIMATED COST OF RECOMMENDED PROJECT

First Stage

Independent Contract

125 ft. of adit - 5 by 7 ft. in the clear @ $37.50 a ft.	$4,687.50	
60 ft. of timbering @ $6.00 a ft.	360.00	
Total		$5,047.50

Supervision

One month @ $500.00	500.00

Equipment

Depreciation on 1955 Willys Station Wagon, 1/60 of $2,400.00 (estimated value)	30.00

Miscellaneous

Fuel and up-keep of Station Wagon, 1,200 miles @ $0.07 per mile	84.00
Assays, 30 @ $3.50	105.00
Total estimated cost	$5,766.50

According to Mr. Brittain, the unit costs of drifting and timbering are those in effect. In my opinion, the unit costs are reasonable in view of the remoteness of the operation and the small footage of driving involved.

Second Stage

Independent Contracts

110 ft. of crosscutting - 4 by 6 ft. @ $32.50	$3,575.00	
Drill station - one job	200.00	
Diamond drilling - 3 holes for total of 550 ft. @ $7.00 per ft.	3,850.00	
		$7,625.00

Supervision

1.5 months @ 500.00 a month	750.00

Equipment

1.5 months depreciation on item of Stage I	45.00

Miscellaneous

Fuel and upkeep of equipment, 1,800 miles @ $0.07 a mile	126.00
Assays, 6 @ $3.50	21.00
Total estimated cost	$8,567.00

Third Stage

Independent Contract

Diamond drilling - 3 holes for total of 1,050 feet @ $7.00 per ft.	$7,350.00

Supervision

2.5 months @ $500 per month	1,250.00

Equipment

2.5 months depreciation on	75.00

Miscellaneous

Fuel and upkeep of equipment, 3,000 miles @ 0.07 a mile	210.00
Assays, 6 @ $3.50	21.00
Total	$8,906.00

Recapitulation of Estimated Costs

Stage	Independent Contracts	Supervision	Equipment	Misc.	Total
1	$5,047.50	$500.00	$30.00	$189.00	$5,766.50
2	7,625.00	750.00	45.00	147.00	8,567.00
3	7,[illegible]	1,[illegible]	70.00	[illegible]	8,[illegible]
Totals	$20,[illegible]	$2,[illegible]	$135.00	$567.00	$23,120.50

CONCLUSIONS

A strong and persistent fault zone on the Horseshoe No. 1 claim carries near-commercial values of uranium where it has been explored by a short adit. The showing merits exploration to determine if good uranium values persist along both the strike and dip of the fault zone.

The recommended 3-stage exploratory project is a feasible method of testing a portion of the potential ore zone. Under the project, unfavorable findings could result in termination of operations upon completion of either stage 1 or stage 2.

The applicant has started driving the adit of Stage 1 and probably will have completed the adit and crosscut of stage 2 before a contract for Governmental participation in the costs of the remaining work can be prepared.

RECOMMENDATION

Approval is recommended in a proposed exploratory project for uranium on the Horseshoe No. 1 claim. As the applicant has started work and probably will have completed much of the proposed work, Governmental participation in costs will be substantially less than the estimated total cost of $23,230.50.

12/12/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
DEC 12 1955

December 7, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Acting Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3995 (Uranium), Ray and Pollard, Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Enclosed are two copies of Supplement No. 2 to the original application for DMEA assistance on the subject docket. Will you please include a copy of Supplement No. 2 with each copy of the original application and the previous amendment.

E. N. Harshman

E. N. Harshman

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
DEC 12 1955

December 7, 1955

224 New Customhouse
Denver 2, Colorado

Messrs. Robert M. Ray and
Jack C. Pollard
2500 Balcover Road
P. O. Box 6537
Houston 5, Texas

Re: Docket DMEA 3995 (Uranium), Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Gentlemen:

This will acknowledge receipt of Supplement No. 2 to the application for DMEA assistance on the subject docket. Copies of the Supplement No. 2 will be placed with each copy of your application and the previous amendment.

Very truly yours,

E. W. Hershman

E. W. Hershman
Acting Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Sec. Op. Comm. (2)
Storms
Faick
Docket 3995
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
DEC 12 1955

December 7, 1955

224 New Customhouse
Denver 2, Colorado

Messrs. Robert H. Ray and
Jack C. Pollard
2500 Bolsover Road
P. O. Box 6557
Houston 5, Texas

Re: Docket DMEA 3995 (Uranium), Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Gentlemen:

This will acknowledge receipt of Supplement No. 2 to the application for DMEA assistance on the subject docket. Copies of the Supplement No. 2 will be placed with each copy of your application and the previous amendment.

Very truly yours,

E. M. Harshman

E. M. Harshman
Acting Executive Officer, DMEA
Field Team, Region III

HMC:ab

cc: Sec. Op. Comm. (2)
Storms
Faick
Docket 3995
Chron.

RECEIVED
DEC 12 1955

SUPPLEMENT NUMBER 2 TO -
APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, as AMENDED

DOCKET NUMBER
DMEA-3995

ROBERT H. RAY & JACK C. POLLARD desire to amend and supplement their application heretofore filed and bearing the above Docket Number, in the following respects:

Under 6

(a) We wish to add the following:

(a-1) In our first supplement and amendment bearing the date of October 27, 1955, we described a drift which we were preparing to excavate by contract on our HORSESHOE MINING CLAIM NO. 1, and said drift is now in the process of being excavated. We now find that it will be desirable to do core drilling inside said drift, and we estimate that about 1,000 feet of core drilling inside the drift will be advantageous and this we propose to do by Independent Contractor. We are now inviting bids for this work but presently do not have any in hand. We estimate, however, that this inside core drilling will cost approximately $7.00 per foot.

Therefore, 1,000 feet of core drilling at $7.00 per foot would total	$ 7,000.00
This amount added to the total estimated costs shown in the original and first supplement to the application, which is	$33,856.12
would be a new total estimated cost of -	$40,856.12

Therefore we respectfully request that this supplement and amendment be added to our original application and previous amendment.

Respectfully submitted,
ROBERT H. RAY & JACK C. POLLARD
By [signature]

This the 2 day of December, 1955.

RECEIVED
DEC 12 1955

SUPPLEMENT NUMBER 2 TO -
APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, as AMENDED

DOCKET NUMBER
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Respectfully submitted,
ROBERT H. RAY & JACK C. POLLARD
By _____

This the 2 day of December, 1955.

11/4/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 1, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3995 (Uranium), Ray and Pollard, Horseshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Enclosed are two copies of a supplement to the original application for DMEA aid on the subject docket. Will you please include a copy of the supplement with each copy of the original application.

W. M. Traver

By J. W. Townsend
J. W. Townsend

Enclosures

RECEIVED
NOV - 3 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 1, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

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W. M. Traver

By J. W. Townsend
J. W. Townsend

Enclosures

RECEIVED
NOV - 3 1955

SUPPLEMENT TO-
APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT of 1950, AS AMENDED

DOCKET NUMBER
DMEA-3995

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Under 6

(a) Independent Contracts- where they prevously wrote "none", they now change this portion of the application to show that there will be an independent contract to drift a shaft along the vein in HORSESHOE MINING CLAIM NO. 1, which shaft will be approximately 5' X 7' and 125' long, with two cross cuts, each about 55 feet in length, and the costs are estimated as follows:

Moving in equipment	$ 600.00
125' drift 5'x7' @ $37.50	4,687.50
Timbering- 12 sets @ $30.00	360.00
Opening 2 cross cuts	200.00
Cross cutting 110' @ $32.50	3,575.00
Powder magazine rental	250.00
Road and Bridge repairs	2,500.00
	$12,172.50

This amount added to the total estimated costs shown in the original application of 21,683.62

Would be a new total estimated cost of $33,856.12

These operations are exploratory, and not development, notwithstanding it is estimated that in these operations some 200 tons ofsalable ores should be removed from the shaft, and they would assay about .48 U_3O_8. Applicants are willing to comply with whatever regulation that may be applicable with respect to the ore to be recovered.

Respectfully submitted,

ROBER H. RAY & JACK C. POLLARD

BY Jack C Pollard

This the 27th day of October, 1955.

SUPPLEMENT TO-
APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT of 1950, AS AMENDED

DOCKET NUMBER
DMEA-3995

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Respectfully submitted,

ROBER H. RAY & JACK C. POLLARD

BY Jack C. Pollard

This the 27th day of October, 1955.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 1, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. R. Storms (With copy of supplement to application)
J. N. Faick (With copy of supplement to application)

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3995 (Uranium), Horshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Enclosed is one copy of a supplement to the original application for DMEA aid on the subject docket. Will you please include it with your copy of the application.

W. M. Traver

By J. W. Townsend
J. W. Townsend

Enclosure

HMC:ab
cc: Sec. Op. Comm. (2)

RECEIVED
NOV - 8 1955

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 1, 1955

224 New Customhouse
Denver 2, Colorado

Memorandum

To: W. R. Storms (With copy of supplement to application)
J. N. Faick (With copy of supplement to application)

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA 3995 (Uranium), Horshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Enclosed is one copy of a supplement to the original application for DMEA aid on the subject docket. Will you please include it with your copy of the application.

W. M. Traver

By J. W. Townsend

Enclosure

HMC:ab
cc: Sec. Op. Comm. (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 1, 1955

224 New Customhouse
Denver 2, Colorado

Mr. J. C. Pollard
2500 Bolsover Road
P. O. Box 6557
Houston 5, Texas

Re: Docket DMEA 3995 (Uranium), Horshoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Dear Mr. Pollard:

This will acknowledge receipt of four copies of a supplement to your application on the above captioned claims. One copy of the supplement will be included with each copy of your original application.

Very truly yours,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

By J. W. Townsend
J. W. Townsend

HMC:ab
cc: Sec. Op. Comm. (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

November 1, 1955

224 New Customhouse
Denver 2, Colorado

Mr. J. C. Pollard
2500 Bolsover Road
P. O. Box 6557
Houston 5, Texas

Re: Docket DMEA 3995 (Uranium), Horsehoe, Verde, and Fault claims, Maricopa and Yavapai Counties, Arizona

Dear Mr. Pollard:

This will acknowledge receipt of four copies of a supplement to your application on the above captioned claims. One copy of the supplement will be included with each copy of your original application.

Very truly yours,

W. M. Traver
Executive Officer, DMEA
Field Team, Region III

By J. W. Townsend
J. W. Townsend

HMC:ab
cc: Sec. Op. Comm. (2)

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
OCT 24 1955

224 New Customhouse
Denver 2, Colorado

October 20, 1955

Memorandum

To: W. H. King (w/brochure)
J. H. Faick

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3995 (Uranium), Jack C. Pollard and Robert H. Ray, (Horseshoe, Verde, and Fault claims), Maricopa and Yavapai Counties, Arizona

Enclosed is the subject application in the amount of $21,683.62. Also enclosed is a letter from the Chairman of the Operating Committee and relevant memoranda from John E. Crawford and Thor H. Hillegaard, members of the Uranium Commodity Committee.

The brochure consists of:

1. Form MF-103 and accompanying answer sheets.

2. Claim map of the Horseshoe, Verde and Fault claims.

A field examination and suitable report are required.

W. M. Traver

Enclosures

W. M. Traver

HMC:pw

cc: Sec.Op.Comm. (2)
DMEA-3995
Chron
Harshman

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
OCT 24 1955

22k New Customhouse
Denver 2, Colorado

October 20, 1955

Memorandum

To: W. E. King (w/brochure)
J. H. Falck

From: Executive Officer, DMEA Field Team, Region III

Subject: Docket DMEA-3995 (Uranium), Jack C. Pollard and Robert H. Ray, (Hermosa, Verde, and Fault claims), Maricopa and Yavapai Counties, Arizona

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The brochure consists of:

1. Form MF-103 and accompanying answer sheets.

2. Claim map of the Hermosa, Verde and Fault claims.

A field examination and suitable report are required.

W. M. Tuver

Enclosures

W. M. Tuver

HMC:pw

cc: Sec.Op.Comm. (2)
DMEA-3995
Caren
Harshman

Surname copy

Murphy 700
Ellis
Geehan
Kilsgaard
Selfridge

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

OCT 13 1955

Messrs. Jack C. Pollard
and Robert H. Ray
P. O. Box 6557
Houston 5, Texas

Re: Docket No. DMEA-3995 (Uranium)
Horseshoe, Verde, and Fault claims
Maricopa and Yavapai Counties,
Arizona

Gentlemen:

The application for assistance in exploring the subject property under the captioned docket number has been reviewed by the Rare and Miscellaneous Metals Division.

The DMEA Field Team, Region III, Mr. W. M. Traver, Executive Officer, 224 New Customhouse Building, Denver 2, Colorado, will schedule a field examination of your property in the near future if it has not already done so.

Any assistance you may give the members of the Field Team during the examination will be appreciated.

Sincerely yours,

Frank E. Johnson

Acting Administrator

FMMurphy/gla
10-11-55
cc to: Admr.'s Reading File
Docket
Code 700
Mr. Murphy
DMEA Field Team, Region III (2)

R.G.S.

Surname copy 700

Murphy
Ellis
Selfridge
Johnson

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

OCT 13 1955

Mr. W. M. Traver
Executive Officer
DMEA Field Team, Region III
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-3995 (Uranium)
Jack C. Pollard and Robert H. Ray
Horsemhoe, Worth, and Fault claims
Maricopa and Yavapai Counties,
Arizona

Dear Mr. Traver:

The captioned application is referred to Region III Field Team for investigation, a field examination, and recommendation. A copy of the application was retained by your office.

Enclosed are copies of memoranda, dated October 3 and 11, 1955, by J. E. Crawford, USBM, and Thor H. Kiilsgaard, USGS, respectively, relating to the subject application.

The Applicants' proposed drilling program to explore the uranium-ore outcrops along Lime Creek and then north and south along inferred fault strikes is not specific as to drill-hole location. However, it is possible that the Applicants may be able to present a more specific program for the field examiners' consideration.

Sincerely yours,

George C. Selfridge
Chairman, Operating Committee (JHB)

Enclosures

APPROVED:

/s/ Robert W. Geehan (JHB)
Member, Bureau of Mines

Thor H. Kiilsgaard (JHB)
Member, Geological Survey

FMMurphy/gla 10-11-55
cc to: Admr.'s Reading File
Operating Committee
Docket
Messrs. JECrawford, Rm. 3641
THKiilsgaard, Rm. 5224
JOHosted, Rm. 3210, GSA
Code 700
Mr. Murphy

RCA

10/11/55 gla

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

RECEIVED
OCT 10 1955

October 11, 1955

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: Thor H. Kiilsgaard, U. S. Geological Survey

Subject: Review of DMEA application, Docket No. 3995, Ray and Pollard prospect, Maricopa and Yavapai Counties, Arizona.

The applicant has proposed an indefinite exploration program intended to further explore radioactive outcrops on his property by diamond drilling. Estimated costs of the project amount to $21,683.62, of which a good part is for the purchase of equipment.

The map submitted with the application does not give any geologic information, thereby making it difficult to evaluate the merits of the property from data on hand. From the applicant's description it appears the property is underlain by granite and that Lime Creek follows the course of a fault believed to be uranium-bearing. One radioactive fault outcrops on the Horseshoe No. 1 claim and apparently strikes in a northern direction across Lime Creek. The applicant proposes to explore this fault by drilling as well as the spots marked in red on the map.

The merits of the property can be ascertained only by a field examination, which is hereby recommended. Field examiners can determine if drilling is warranted. During the course of the examination they also should be able to work out an exploration program acceptable to the applicant and the Government, should they find the property warrants exploration. In this respect, I believe it would be better for the field examiners to meet with the applicant and discuss a program than to ask the applicant by correspondence for more exploration information. If diamond drilling is recommended the field examiners should discuss with the applicant the difficulties to be expected by X-Ray diamond drills. By and large, these drills have proved impractical except in some short holes. There is also some question on whether the Government would want to participate in the purchase of such equipment as a 4 x 4 Pickup, and a 4 x 4 Station wagon for a relatively short drilling project such as this would appear to be.

Thor H. Kiilsgaard

Thor H. Kiilsgaard

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

October 11, 1955

RECEIVED
OCT 10 1955

Memorandum

To: E. W. Ellis, Defense Minerals Exploration Administration

From: Thor H. Kiilsgaard, U. S. Geological Survey

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cc: Director's reading, 4212
Branch reading, 4212
DMEA (3)
Docket file
J. E. Crawford, 3641
J. O. Bosted, 3210

THKiilsgaard:iml
G-10/11/55

Thor H. Kiilsgaard

10/4/55 gla

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

October 3, 1955

Memorandum

To: Ernest William Ellis, DMEA Member
Uranium Commodity Committee, Room 4445

From: John E. Crawford, Bureau of Mines Member
Uranium Commodity Committee

Subject: Application for assistance, DMEA Docket 3995, Robert H. Ray and Jack C. Pollard, Horseshoe Mining Claims, Verde Mining Claims, and Fault Mining Claims, Maricopa and Yavapai Counties, Ariz.

I have reviewed the application of Robert H. Ray and Jack C. Pollard, and I have discussed it with Joseph O. Hosted, Washington representative of the Atomic Energy Commission.

Mineralization has been found in a fault zone west of the Verde River, near Horseshoe Dam, Maricopa and Yavapai Counties. Material assaying 0.48 percent U_3O_8 or better was taken from the Horseshoe Claim No. 1. Radiometric anomalies have been noted in many places on the claims.

The applicant wishes to conduct an exploratory drilling program on the property to determine the extent and grade of mineralization. The disposition of holes on the claims is not described in the application, and it will be necessary for either the Field Team to determine a proper program or the DMEA to request the applicant to submit a detailed exploration plan.

We recommend that the application be referred to the Field Team, inasmuch as the property appears to be the source of significant uranium mineralization, possibly of a primary nature. The Field Team should consult with Mr. Ernest E. Thurlow, Atomic Energy Commission, Salt Lake City, Utah, for the benefit of such information as he may have regarding geology and mineralization in the vicinity of the subject claims.

We are forwarding the application to Thor Kilsgaard of the Geological Survey.

John E. Crawford
John E. Crawford

Mr. Jack C. Pollard &
Mr. Robert H. Ray
P. O. Box 6557
Houston 5, Texas

September 29, 1955
Subject: DMEA-3995
Re: Exploration Assistance
Horseshoe, Verde, & Fault Claims

Gentlemen:

The receipt of your application dated September 21, 1955, for exploration assistance under the Defense Production Act of 1950, as amended, is hereby acknowledged.

Your application has been assigned Docket Number DMEA-3995 and referred to the Rare & Misc. Metals Division.

Kindly identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Robert E. Adams, Chief
Operations Control and
Statistics Division

60932

September 29, 1955

Memorandum

To: Executive Officer, DMEA Field Team, Region III

From: Chief, Operation's Control and Statistics Division

Subject: Assignment of Docket Number

There is listed below the assigned docket number to an application recently received from Region III.

DMEA - 3995 Jack C. Pollard & Robert H. Ray

Robert E. Adams
Chief, Operation's Control
and Statistics Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
SEP 28 1955

224 New Customhouse
Denver 2, Colorado

September 26, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA aid (Uranium), Robert H. Ray and Jack C. Pollard, Horeseshoe, Verde and Fault Groups of Claims, Maricopa and Yavapai Counties, Arizona.

Enclosed are three copies of the subject application in the amount of $21,683.62. One copy is retained in our files.

W. M. Traver

W. M. Traver

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

RECEIVED
SEP 28 1955

224 New Customhouse
Denver 2, Colorado

September 26, 1955

Memorandum

To: Secretary to the Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region III

Subject: Application for DMEA aid (Uranium), Robert H. Ray and Jack C. Pollard, Horeseshoe, Verde and Fault Groups of Claims, Maricopa and Yavapai Counties, Arizona.

Enclosed are three copies of the subject application in the amount of $21,683.62. One copy is retained in our files.

W. M. Traver

W. M. Traver

Enclosures

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DMEA
Date Rec'd
SEP 23 1955
BUREAU OF MINES
Denver, Colorado

Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

RECEIVED SEP 23 1955

Not to be filled in by applicant

Docket No. DMEA-3995
Metal or Mineral Uranium
Date Received 9/28/55
Estimated Cost $21,683.62
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: ROBERT H. RAY, whose address is 2500 Bolsover Street, and JACK C. POLLARD, whose address is 2500 Bolsover Street, Houston, Texas, their mailing address being P. O. Box 6557, Houston 5, Texas, they being partners

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract) all located in Red River mining
NORTHERN MINING CLAIMS Nos. 1 to 20) District, Section 5, T7N, R6E and
VERDE MINING CLAIMS Nos. 1 to 12) Sections 32 and maybe 29, T8N, R5E
EAGLE MINING CLAIMS Nos. 1 to 9) Maricopa and Yavapai Counties, Ariz.
as shown on accompanying sheet under 3.

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Purchaser under contract, with 12½% royalty retained by sellers.

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it -none-

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See 3 (f) on attached sheet.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See 4 attached sheet.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore primarily uranium

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

(*c*) The work will start within Oct. 1, 1955 days and be completed within 6 months from the date of an exploration project contract.

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6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project:

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(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project.

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NOTE.—No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes), or any other indirect costs, or work performed or costs incurred before the date of the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes.

(*b*) How do you propose to furnish your share of the costs?

[X] Money [X] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated September 21, 1955

[illegible] & JACK C. POLLARD
(Applicant)

By [signature]
Jack C. Pollard

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U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

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The mining claims owned by the applicants are all unpatented mining claims located in unsurveyed public lands west of Verde River, near Horseshoe Dam, and straddling the line between Maricopa and Yavapai Counties, Arizona, and situated in Section 5, T7N, R6E, and 32 (and maybe extending into 29) T8N, R6E, in Red Rover Mining District, and more definitely identified as follows:

NAME AND NUMBER OF CLAIM	LOCATOR	DATE OF NOTICE	FILING DATE	IN RECORDERS OFFICE MARICOPA COUNTY, ARIZ. FEE FILE	VOL	PAGE
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HORSESHOE MINING CLAIMS CONT'D.

	LOCATOR	DATE	FILED	FEE FILE	VOL.	PAGE
HORSESHOE MINING CLAIM NO. 15	Elmer Young	8-11-55	8-11-55	95970	1693	131
HORSESHOE MINING CLAIM NO. 16	Kenneth P. Smith	8-11-55	8-11-55	95971	1693	132
HORSESHOE MINING CLAIM NO. 17	Kenneth P. Smith	8-11-55	8-11-55	95972	1693	133
HORSESHOE MINING CLAIM NO. 18	Elmer Young	8-11-55	8-11-55	95973	1693	134
HORSESHOE MINING CLAIM NO. 19	Elmer Young	8-11-55	8-11-55	95974	1693	135
HORSESHOE MINING CLAIM NO. 20	Kenneth P. Smith	8-11-55	8-11-55	95975	1693	136

VERDE MINING CLAIMS NOS. 1 to 12

VERDE MINING CLAIM NO. 1	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96667	1694	208
VERDE MINING CLAIM NO. 2	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96668	1694	209
VERDE MINING CLAIM NO. 3	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96669	1694	210
VERDE MINING CLAIM NO. 4	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96670	1694	211
VERDE MINING CLAIM NO. 5	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96671	1694	215
VERDE MINING CLAIM NO. 6	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96672	1694	216

VERDE MINING CLAIMS CONT'D.

	LOCATOR	DATE	FILED	FEE FILE	VOL.	PAGE
VERDE MINING CLAIM NO. 7	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96673	1694	217
VERDE MINING CLAIM NO. 8	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96674	1694	218
VERDE MINING CLAIM NO. 9	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96675	1694	219
VERDE MINING CLAIM NO. 10	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96676	1694	220
VERDE MINING CLAIM NO. 11	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96677	1694	221
VERDE MINING CLAIM NO. 12	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96678	1694	222

FAULT MINING CLAIMS NOS. 1 to 9

FAULT MINING CLAIM # 1	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103136	1706	142
FAULT MINING CLAIM # 2	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103137	1706	143
FAULT MINING CLAIM # 3	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103138	1706	144
FAULT MINING CLAIM # 4	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103139	1706	145
FAULT MINING CLAIM # 5	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103140	1706	146

FAULT MINING CLAIMS CONT'D.

	LOCATOR	DATE	FILED	FEE FILE	VOL.	PAGE
FAULT MINING CLAIM # 6	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103141	1706	147
FAULT MINING CLAIM # 7	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103142	1706	148
FAULT MINING CLAIM # 8	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103143	1706	149
FAULT MINING CLAIM # 9	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103144	1706	150

NOTE-

It is anticipated that some five or six additional claims may be acquired adjacent to the Fault Claims above mentioned, but such additional claims have not even been staked yet. If and when they are acquired, applicants will disclose the fact and will be willing to place them in the same category as the said above mentioned claims with respect to any contract for aid in exploration that may be made between applicants and the government.

4 (a) So far as is now known no mining has ever been carried on upon the land covered by the claims in this application mentioned, and there are no mining facilities presently upon the premises. There is a road running from Phoenix to Horseshoe Dam, which road is paved (black top) to the village of Cave Creek. From Cave Creek on to Horseshoe dam the road is only dirt, but it is an all weather road, except in flood time, and this is very rare in the vicinity.

From Horseshoe Dam (near Horseshoe Dam) on to the claims Applicants have constructed a road with bulldozer a distance of some two or three miles which is suitable for jeeps and pickup trucks at present. The area covered by the claims, however, is rather rough mountain country, and it has been traversed by applicants and their employees only on foot and on horseback.

(b) So far as is known there has been no past production of ores form the premises and there is no current production, and no estimate can be made presently of the ore reserves, if any, and the quantities and grades are not known.

(c) The claims are situated in an area that may be called the mountain foothills. The country is rough and much of it steeply dipping. To the north, south and west of the claims the mountains become sharply higher. The slope from the higher mountains is eastward down across the claims to the Verde River which runs about two miles east of the easterly claims. As shown by the accompanying map, Lime Creek runs eastward across the main body of the claims. It is dry except for short periods following heavy rains. Its banks generally are granite bluffs ranging from a few feet to a hundred feet or more.

It is suspected that Lime Creek, itself, may be a major fault carrying uranium ore. On Horseshoe Claim No. 1 at the point indicated by a circle colored red is a definite vein or fault from which ore has been taken that assays .48 per cent U_3O_8 or better and that from depths of only five feet or thereabout dug or blasted horizontally into the bank or wall of the creek canyon. At the several points indicated by the circles colored red, high geiger counter readings have been recorded. The area generally is highly faulted, which faults, unfortunately cannot be mapped at present, because back from the canyons they are filled or covered over completely by overburden.

The fault that appears in Lime Creek canyon on Horseshoe Claim No. 1 has its granite walls altered. It is filled with a blue gray, marl like material laced through with hematite veins, and this material is highly radio active. It otherwise meets the description in some of the literature of what the beginning (near surface) of a primary uranium deposit should be like. This fault trends north and south, running the length of Horseshoe Claim No. 8 and on up through the Fault Claim group. We think, but do not know it, that the hade of this fault is toward Verde River- eastward. The estimated slope in the south bank of Lime Creek is about 55 degrees.

All this makes us desire to explore the area with core drill.

4 (d) Considerang general mountain country and the usual lack of roads, we feel that this area is more than usual as for accessibility. A hard surface road runs from Phoenix and Mesa to Cave Creek and a dirt road (all waather) the 20 miles from Cave Creek to Horseshoe Dam. We have recently constructed a crude but passable road from near Horseshoe dam to a point on lime creek near Horseshoe Claim No. 1. Now, one can travel all the way to the main body of the claims by truck. It is about 40 miles from Phoenix to Cave Creek, 20 miles from Cave Creek to Horseshoe Dam, and 3 miles from the dam to the claims along the recently constructed road. It is approximately 150 miles from the claims to Globe, Arizona, the nearest buying station. However, we are hopeful that a buying station will be established at Phoenix within a reasonable time. That will reduce the long haul to about 63 miles.

Proceeding from the claims toward Phoenix, one finds a keeper's house at Horseshoe Dam, one ranch house down the river about a mile or two below the dam, but on the east side of Verde River, whereas the road to Phoenix is on the west side of the river; then on 20 miles to Cave Creek where about 20 or more families live (Here is a post office, a restaurant, a general store, two filling stations and a small tourist court). From this village on toward Scotsdale and Phoenix there are increasingly more houses and people.

(e) Some manpower could be had from ranches and the countryside in general, but the main source would be Phoenix and Mesa, 60 to 75 miles away, except personnel brought in from a distance. Phoenix will be the main supply center. Water can be had from Verde River for mining operations. For core drilling purposes, it is likely that water may be had in Lime Creek Canyon, by digging a well in the creek bed. There is no electric power near the claims at present.

5 (b) We propose to begin the core drilling work in the bed and banks of Lime Creek, taking cores as far back from the face of the rock right down the vein as we can recover ore for assaying; then we hope by the core drill to establish the hade of the fault and sample the ore in it to a point about 200 feet below the surface of the ground. We expect to follow the vein southward from Lime Creek for such distance as may seem practical, which will have to be determined by findings as the work progresses, and to follow it northward through Horseshoe Claim No. 8 and on up through the Fault group, depending on findings as the work progresses. Then we propose to do a reasonable amount of core drilling at the points indicated by the red circles on the map, these all being exposures with sufficient counts to justify some expenditure. If it is found that these points give up ores of good uranium content, then we propose to do sufficient coring along the lodes or veins to determine whether the deposits are commercial in nature and the general trends of the deposits.

5 (d) While neither applicant has had any experience in hard rock mining, they both have had more than 20 years of experience in the opration of seismograph crews, and gravity crews, in North and South America, Europe, Asia and Africa. They are both graduates of Rice Institute, Houston, Texas, and they both are officers in Robert H. Ray Company of the same city.

Their geologist who will be in general charge of the operation is a Rhodes Scholar, graduate of Oxford University, and has had 25 years experience as a hard rock geologist.

Their engineer who will be in charge of the field work is an all around capable man with a varied and successful experience in engineering problems.

Their driller, who will actually operate the drilling equipment had most of his experience in shot hole drilling, much of it in lime rock and boulder country.

6. Estimate of Costs

(a) Independent contracts - None

(b) Labor, Supervision, consultants-

2 laborers at a salary of	$310.00 each	$ 620.	Pr. Mo.
1 driller " " " "	500.00	500.	" "
1 engineer " " " "	500.00	500.	" "
1 geologist " " " "	750.00	750.	" "
		$2370.00	" "

(c)

1 geiger counter	$175.00	*
6 water drums @ $8.50	51.00	*
2 gasoline driven water pumps w/hose $125.00	250.00	*
1 ax	4.50	*
2 shovels @ 2.75	5.25	*
2 picks @ 4.00	8.00	*
2 sledge hammers @ 6.50	13.00	*
1 crosscut saw	11.50	*
1 pinchbar	6.50	*

* Estimated

6 (c) Cont'd.

5 star drills @ 2.25 each	11.25 *	
2 ballpeen hammers 3.75 "	7.50 *	
Miscellaneous small tools	50.00 *	593.50

1 Model X Ray Dril with 200' drill pipe, Wt. 205 lbs. which cuts 1 3/16" hole and 3/4" core	1790.00	
1 Willys 4X4 pick up truck	1991.00	
1 " 4X4 Station wagon	2690.00	
	6471.00	

Note-
These items being sent into such rough use will probalbly wear out in 2 years. Therefore it is suggested that 4 1/6 % of the cost per month be set as a use allowance. For this group of 3 items 269.62 pr. Mo.
280 gals gas @ 33¢ & 20 Qts. oil @.40 " 100.40 " "

(d) 2 camp trailers and 1 tent at a rental of 100.00 " "

(e) None

(f) None

(g) Estimated cost of repairs to equipment per month 250.00 *
Accounting for project 25.00 per mo. *
Analytical and Assay work 250.00 " " *
Workmen's comp. Ins. 40.00 " " *
Employers Liability Ins. 20.00 " " *
Payroll taxes 40.00 " " *
625.00 625.00 pr. Mo.

(h) Contingencies 50.00 " " * 50.00

* Estimated

(See next page for recapitualation)

Recapitulation-

6 (b)	monthly cost	$2370.00			and for 6 Mos.	$14,220.00
(c)						593.50
	and 269.62 and	100.40	per mo.			
	a total of	370.02	" "		and for 6 mo.	2,220.12
(d)		100.00	" "	" "	6 "	600.00
(g)		625.00	" "	" "	6 "	3,750.00
(h)		50.00	" "	" "	6 "	300.00
						$21,683.62

Note-
Under Item 6 (c) probably more th n half of these items would still be on hand and useful at the end of the 6 months period.

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DMEA
Date Rec'd.
SEP 23 1955
BUREAU OF MINES
Denver, Colorado

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

RECEIVED
SEP 28 1955

Not to be filled in by applicant

Docket No. DMEA-3995
Metal or Mineral Uranium
Date Received 9/28/55
Estimated Cost $21,683.62
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: ROBERT H. RAY, whose address is 2500 Bolsover Street, and JACK C. POLLARD, whose address is 2500 Bolsover Street, Houston, Texas, their mailing address being P. O. Box 6557, Houston 5, Texas, they being partners

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract) all located in Red Rover mining
HORSESHOE MINING CLAIMS Nos. 1 to 20) District, Section 5, T7N, R6E and
VERDE MINING CLAIMS Nos. 1 to 12) Sections 32 and maybe 29, T8N, R6E
FAULT MINING CLAIMS Nos. 1 to 9) Maricopa and Yavapai Counties, Ariz.
as shown on accompanying sheet under 3.

(*b*) State any mine name by which the property is known.

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise Purchaser under contract, with 12½% royalty retained by sellers.

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it -none-

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice. See 3 (f) on attached sheet.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes. See 4 attached sheet.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore primarily uranium

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc.

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[x] Money [x] Use of equipment owned by you [ ] Other

Explain in detail on acompanying paper.

CERTIFICATION

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Dated September 21, 1955

ROBERT H. RAY & JACK C. POLLARD
(Applicant)

By [signature]

[signature]

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U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

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HORSESHOE MINING CLAIMS CONT'D.

	LOCATOR	DATE	FILED	FEE FILE	VOL.	PAGE
HORSESHOE MINING CLAIM NO. 15	Elmer Young	8-11-55	8-11-55	95970	1693	131
HORSESHOE MINING CLAIM NO. 16	Kenneth P. Smith	8-11-55	8-11-55	95971	1693	132
HORSESHOE MINING CLAIM NO. 17	Kenneth P. Smith	8-11-55	8-11-55	95972	1693	133
HORSESHOE MINING CLAIM NO. 18	Elmer Young	8-11-55	8-11-55	95973	1693	134
HORSESHOE MINING CLAIM NO. 19	Elmer Young	8-11-55	8-11-55	95974	1693	135
HORSESHOE MINING CLAIM NO. 20	Kenneth P. Smith	8-11-55	8-11-55	95975	1693	136

VERDE MINING CLAIMS NOS. 1 to 12

VERDE MINING CLAIM NO. 1	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96667	1694	208
VERDE MINING CLAIM NO. 2	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96668	1694	209
VERDE MINING CLAIM NO. 3	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96669	1694	210
VERDE MINING CLAIM NO. 4	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96670	1694	211
VERDE MINING CLAIM NO. 5	Elmer Young & Earl C. Johnson	8-11-55	8-12-55	96671	1694	215
VERDE MINING CLAIM NO. 6	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96672	1694	216

VERDE MINING CLAIMS CONT'D.

	LOCATOR	DATE	FILED	FEE FILE	VOL.	PAGE
VERDE MINING CLAIM NO. 7	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96673	1694	217
VERDE MINING CLAIM NO. 8	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96674	1694	218
VERDE MINING CLAIM NO. 9	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96675	1694	219
VERDE MINING CLAIM NO. 10	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96676	1694	220
VERDE MINING CLAIM NO. 11	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96677	1694	221
VERDE MINING CLAIM NO. 12	E. W. Young & Earl C. Johnson	8-11-55	8-12-55	96678	1694	222

FAULT MINING CLAIMS NOS. 1 to 9

FAULT MINING CLAIM # 1	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103136	1706	142
FAULT MINING CLAIM # 2	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103137	1706	143
FAULT MINING CLAIM # 3	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103138	1706	144
FAULT MINING CLAIM # 4	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103139	1706	145
FAULT MINING CLAIM # 5	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103140	1706	146

FAULT MINING CLAIMS CONT'D.

	LOCATOR	DATE	FILED	FEE FILE	VOL.	PAGE
FAULT MINING CLAIM # 6	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103141	1706	147
FAULT MINING CLAIM # 7	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103142	1706	148
FAULT MINING CLAIM # 8	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103143	1706	149
FAULT MINING CLAIM # 9	E. W. Young & Earl C. Johnson	8-21-55	8-30-55	103144	1706	150

NOTE-

It is anticipated that some five or six additional claims may be acquired adjacent to the Fault Claims above mentioned, but such additional claims have not even been staked yet. If and when they are acquired, applicants will disclose the fact and will be willing to place them in the same category as the said above mentioned claims with respect to any contract for aid in exploration that may be made between applicants and the government.

4 (a) So far as is now known no mining has ever been carried on upon the land covered by the claims in this application mentioned, and there are no mining facilities presently upon the premises. There is a road running from Phoenix to Horseshoe Dam, which road is paved (black top) to the village of Cave Creek. From Cave Creek on to Horseshoe dam the road is only dirt, but it is an all weather road, except in flood time, and this is very rare in the vicinity.

From Horseshoe Dam (near Horseshoe Dam) on to the claims Applicants have constructed a road with bulldozer a distance of some two or three miles which is suitable for jeeps and pickup trucks at present. The area covered by the claims, however, is rather rough mountain country, and it has been traversed by applicants and their employees only on foot and on horseback.

(b) So far as is known there has been no past production of ores form the premises and there is no current production, and no estimate can be made presently of the ore reserves, if any, and the quantities and grades are not known.

(c) The claims are situated in an area that may be called the mountain foothills. The country is rough and much of it steeply dipping. To the north, south and west of the claims the mountains become sharply higher. The slope from the higher mountains is eastward down across the claims to the Verde River which runs about two miles east of the easterly claims. As shown by the accompanying map, Lime Creek runs eastward across the main body of the claims. It is dry except for short periods following heavy rains. Its banks generally are granite bluffs ranging from a few feet to a hundred feet or more.

It is suspected that Lime Creek, itself, may be a major fault carrying uranium ore. On Horseshoe Claim No. 1 at the point indicated by a circle colored red is a definite vein or fault from which ore has been taken that assays .48 per cent U_3O_8 or better and that from depths of only five feet or thereabout dug or blasted horizontally into the bank or wall of the creek canyon. At the several points indicated by the circles colored red, high geiger counter readings have been recorded. The area generally is highly faulted, which faults, unfortunately cannot be mapped at present, because back from the canyons they are filled or covered over completely by overburden.

The fault that appears in Lime Creek canyon on Horseshoe Claim No. 1 has its granite walls altered. It is filled with a blue gray, marl like material laced through with hematite veins, and this material is highly radio active. It otherwise meets the description in some of the literature of what the beginning (near surface) of a primary uranium deposit should be like. This fault trends north and south, running the length of Horseshoe Claim No. 8 and on up through the Fault Claim group. We think, but do not know it, that the hade of this fault is toward Verde River- eastward. The estimated slope in the south bank of Lime Creek is about 55 degrees.

All this makes us desire to explore the area with core drill.

4 (d) Consideraing general mountain country and the usual lack of roads, we feel that this area is more than usual as for accessibility. A hard surface road runs from Phoenix and Mesa to Cave Creek and a dirt road (all weather) the 20 miles from Cave Creek to Horseshoe Dam. We have recently constructed a crude but passable road from near Horseshoe dam to a point on lime creek near Horseshoe Claim No. 1. Now, one can travel all the way to the main body of the claims by truck. It is about 40 miles from Phoenix to Cave Creek, 20 miles from Cave Creek to Horseshoe Dam, and 3 miles from the dam to the claims along the recently constructed road. It is approximately 150 miles from the claims to Globe, Arixona, the nearest buying station. However, we are hopeful that a buying station will be established at Phoenix within a reasonable time. That will reduce the long haul to about 63 miles.

Proceeding from the claims toward Phoenix, one finds a keeper's house at Horseshoe Dam, one ranch house down the river about a mile or two below the dam, but on the east side of Verde River, whereas the road to Phoenix is on the west side of the river; then on 20 miles to Cave Creek where about 20 or more families live (Here is a post office, a restaurant, a general store, two filling stations and a small tourist court). From this village on toward Scotsdale and Phoenix there are increasingly more houses and people.

(e) Some manpower could be had from ranches and the countryside in general, but the main source would be Phoenix and Mesa, 60 to 75 miles away, except personnel brought in from a distance. Phoenix will be the main supply center. Water can be had from Verde River for mining operations. For core drilling purposes, it is likely that water may be had in Lime Creek Canyon, by digging a well in the creek bed. There is no electric power near the claims at present.

5 (b) We propose to begin the core drilling work in the bed and banks of Lime Creek, taking cores as far back from the face of the rock right down the vein as we can recover ore for assaying; then we hope by the core drill to establish the hade of the fault and sample the ore in it to a point about 200 feet below the surface of the ground. We expect to follow the vein southward from Lime Creek for such distance as may seem practical, which will have to be determined by findings as the work progresses, and to follow it northward through Horseshoe Claim No. 8 and on up through the Fault group, depending on findings as the work progresses. Then we propose to do a reasonable amount of core drilling at the points indicated by the red circles on the map, these all being exposures with sufficient counts to justify some expenditure. If it is found that these points give up ores of good uranium content, then we propose to do sufficient coring along the lodes or veins to determine whether the deposits are commercial in nature and the general trends of the deposits.

5 (d) While neither applicant has had any experience in hard rock mining, they both have had more than 20 years of experience in the opration of seismograph crews, and gravity crews, in North and South America, Europe, Asia and Africa. They are both graduates of Rice Institute, Houston, Texas, and they both are officers in Robert H. Ray Company of the same city.

Their geologist who will be in general charge of the operation is a Rhodes Scholar, graduate of Oxford University, and has had 25 years experience as a hard rock geologist.

Their engineer who will be in charge of the field work is an all around capable man with a varied and successful experience in engineering problems.

Their driller, who will actually operate the drilling equipment had most of his experience in shot hole drilling, much of it in lime rock and boulder country.

6. Estimate of Costs

(a) Independent contracts - None

(b) Labor, Supervision, consultants-

2 laborers at a salary of	$310.00 each	$ 620.	Pr. Mo.
1 driller " " " "	500.00	500.	" "
1 engineer " " " "	500.00	500.	" "
1 geologist " " " "	750.00	750.	" "
		$2370.00	" "

(c)

1 geiger counter	$175.00	*
6 water drums @ $8.50	51.00	*
2 gasoline driven water pumps w/hose $125.00	250.00	*
1 ax	4.50	*
2 shovels @ 2.75	5.25	*
2 picks @ 4.00	8.00	*
2 sledge hammers @ 6.50	13.00	*
1 crosscut saw	11.50	*
1 pinchbar	6.50	*

* Estimated

6 (c) Cont'd.

5 star drills @ 2.25 each	11.25 *	
2 ballpeen hammers 3.75 "	7.50 *	
Miscellaneous small tools	50.00 *	593.50

1 Model X Ray Dril with 200' drill pipe, Wt. 205 lbs. which cuts 1 3/16" hole and 3/4" core	1790.00
1 Willys 4X4 pick up truck	1991.00
1 " 4X4 Station wagon	2690.00
	6471.00

Note-
These items being sent into such rough use will probalbly wear out in 2 years. Therefore it is suggested that 4 1/6 % of the cost per month be set as a use allowance. For this group of 3 items 269.62 pr. Mo.
280 gals gas @ 33¢ & 20 Qts. oil @.40 * 100.40 " "

(d) 2 camp trailers and 1 tent at a rental of 100.00 " "

(e) None

(f) None

(g) Estimated cost of repairs to

equipment per month	250.00		*	
Accounting for project	25.00	per mo.	*	
Analytical and Assay work	250.00	" "	*	
Workmen's comp. Ins.	40.00	" "	*	
Employers Liability Ins.	20.00	" "	*	
Payroll taxes	40.00	" "	*	
	625.00			625.00 pr. Mo.

(h) Contingencies 50.00 " " * 50.00

* Estimated

(See next page for recapitualation)

Recapitulation-

6 (b)	monthly cost	$2370.00	and for 6 Mos.		$14,220.00
(c)					593.50
	and 269.62 and 100.40 per mo. a total of	370.02	" "	and for 6 Mo.	2,220.12
(d)		100.00	" " " "	6 "	600.00
(g)		625.00	" " " "	6 "	3,750.00
(h)		50.00	" " " "	6 "	300.00
					$21,683.62

Note-

Under Item 6 (c) probably more than half of these items would still be on hand and useful at the end of the 6 months period.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
~~1012 Flood Building~~
~~870 Market Street~~
~~San Francisco 2, Calif.~~
OFFICIAL BUSINESS
DMEA AUDITOR
420 CUSTOM HOUSE
555 BATTERY STREET
SAN FRANCISCO 11, CALIF.

AIR MAIL

SAN FRANCISCO CALIF. AUG 25 '55

Mr. E. D. Talbert, Acting Chief
Contract Administration and Audit Division.
Defense Minerals Exploration Administration
Interior Building
Washington 25,
D.C.

FIRST CLASS

VERDE 9
VERDE 6
VERDE 5
VERDE 12
VERDE 8
VERDE 4
VERDE 3
VERDE 11
VERDE 7
VERDE 2
VERDE 1
VERDE 10
FENCE
APPROXIMATE TOWNSHIP LINE
FLOW SHEET
HORSESHOE 4
HORSESHOE 5
HORSESHOE 15
HORSESHOE 3
HORSESHOE 6
T8N - R6E
T7N - R6E
HORSESHOE 16
HORSESHOE 14
HORSESHOE 2
HORSESHOE 7
HORSESHOE 17
HORSESHOE 1
HORSESHOE 8
HORSESHOE 18
HORSESHOE 20
HORSESHOE 9
HORSESHOE 13
HORSESHOE 19
HORSESHOE 11
HORSESHOE 10
HORSESHOE 12
VEINS OR FISSURES CARRYING ORE
S 84° 20' 10" E
13,288.7'
HORSESHOE 20 TO Verde River
SCALE 1" = 400'
32
PROBABLE LINE LAKE PEAL COUNTY MARICOPA COUNTY
20
FAULT 14
FAULT 10
FAULT 13
FAULT 1
FAULT 3
FAULT 6
FAULT 9
FAULT 11
FAULT 2
FAULT 4
FAULT 5
FAULT 8
FAULT 12
FAULT PLANE